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This file is part of the following reference:

**Cozens, Glendyn John (2008) *An analysis of the first three catalogues of southern star clusters and nebulae.* PhD thesis, James Cook University.**

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## APPENDIX F – THE REVISED DUNLOP CATALOGUE

Appendix F contains information on the 363 identified objects (mostly non-stellar) from the Dunlop catalogue. The Dunlop number is given at the top left of each image, with 13 from the microfilm of Dunlop's notes, labelled mf. Further information is given below the image.

This includes:

- 1) Other names by which the object is known
- 2) Type of object (open cluster, globular cluster, nebula, planetary nebula, galaxy)
- 3) Constellation the object is located within (standard 3 letter abbreviation)
- 4) Visual magnitude of the object
- 5) Size of the object, given in arc-minutes, except for planetary nebulae which are given in arc-seconds (").
- 6) Accurate position of the object using J2000 coordinates for Right Ascension in decimal hours and Declination in decimal degrees.

In some instances, for example Dunlop number 2, there is more than one entry. This is because John Herschel divided the object into parts with separate numbers, and consequently there are multiple NGC identifications and positions. Where an object was repeated in the original Dunlop catalogue, it is only included in this revised catalogue once, with the most correct Right Ascension and Declination listed. The repeated Dunlop number is included in 'Other Names' below the image.

Dunlop number 1 is the only double star included. Also included are some asterisms, dark nebulae and Milky Way star clouds.

Although many images have the same scale (10 x 10 arc-minutes), for comparisons of size, the numerical value given should be used, rather than the image.

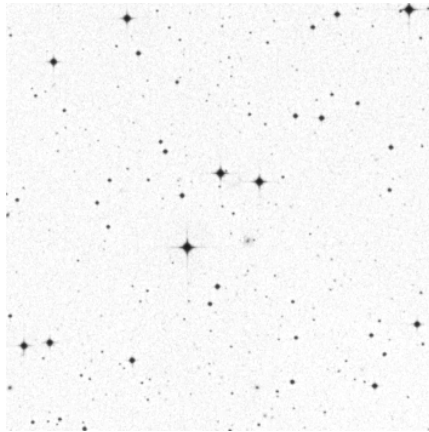
Images in this revised catalogue were taken from three sources:

1. NGC labelled objects: from 'The NGC/IC Project', *NGC/IC Images and data*, 2007, <[http://www.ngcic.org/dss/dss\\_ngc.asp](http://www.ngcic.org/dss/dss_ngc.asp)>, accessed 16 December, 2007.
2. Unlabelled objects apart from those listed in (3) below: from the *ESO Online Digitized Sky Survey*, 2000, <<http://archive.eso.org/dss/dss>>, accessed 31 December, 2007.
3. Dunlop numbers 324, 362, 490, 509, 559, 605, mf 854 and mf 1100: from *Desktop Universe*, CD-ROM, Main Sequence Software.

### Abbreviations used:

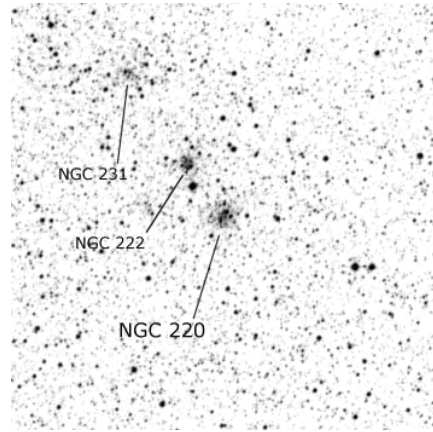
Ast	asterism
Const	Constellation (Standard 3 letter abbreviations are used for the constellations)
Coords	Coordinates
Dec	Declination
GC	Globular cluster
Gxy	Galaxy
IC	Index Catalogue
Lac	Lacaille number (see Appendix B)
MWSC	Milky Way star cloud
Neb	nebula
NGC	New General Catalogue
OC	Open cluster
poss	Possible Dunlop object (uncertain identification)
PN	Planetary nebula
RA	Right Ascension
"	arc-seconds

**1**  
poss



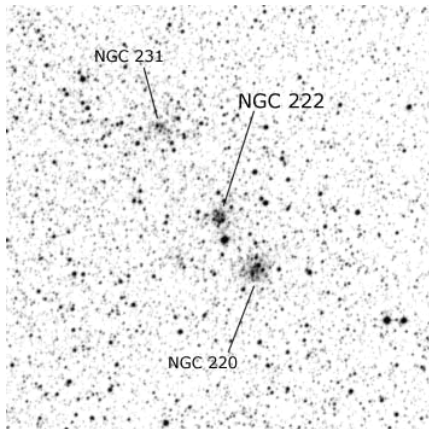
Other Names: GSC 9368335  
Type: D\*      Const: Men  
V mag: 12.5    Size: 0.9  
RA: 4.411    Dec: -77.33

**2**



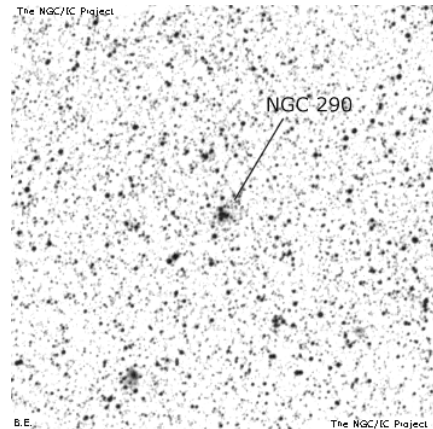
Other Names: NGC 220  
Type: OC      Const: Tuc  
V mag: 12.4    Size: 11.3  
RA: 0.675    Dec: -73.40

**2**



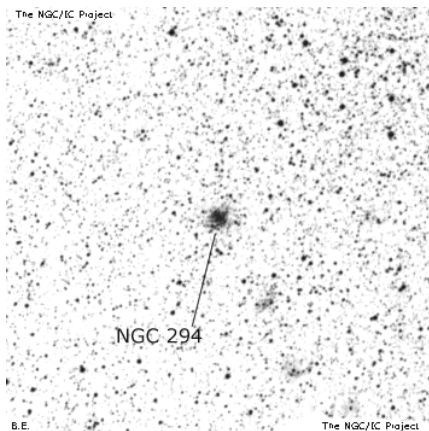
Other Names: NGC 222  
Type: OC      Const: Tuc  
V mag: 12.2    Size: 5.7  
RA: 0.679    Dec: -73.38

**5**



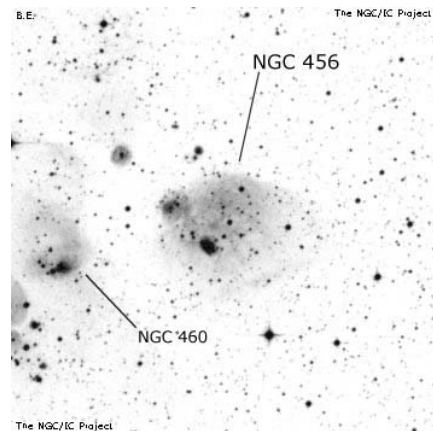
Other Names: NGC 290  
Type: OC      Const: Tuc  
V mag: 12      Size: 1.1  
RA: 0.854    Dec: -73.16

**6**



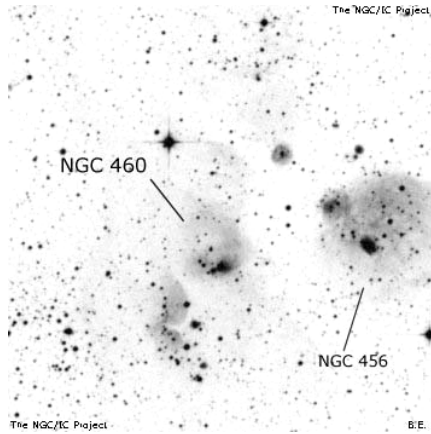
Other Names: NGC 294  
Type: OC      Const: Tuc  
V mag: 12.7    Size: 1.7  
RA: 0.885    Dec: -73.37

**7**



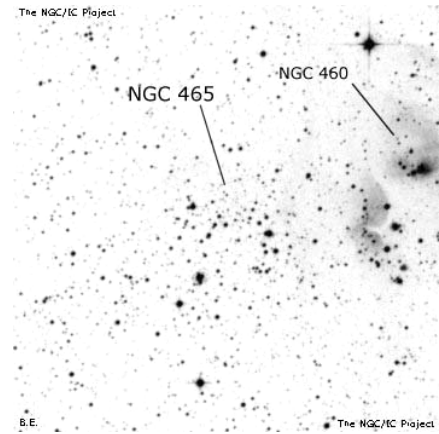
Other Names: NGC 456  
Type: Neb      Const: Tuc  
V mag:        Size: 15  
RA: 1.229    Dec: -73.28

8



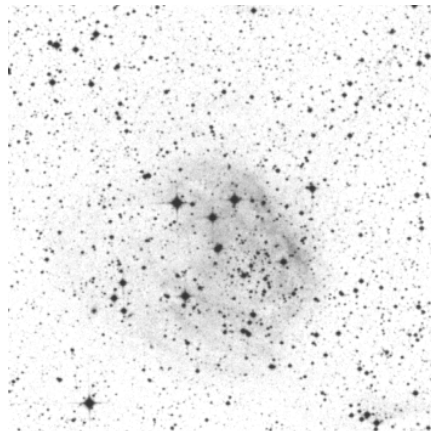
Other Names: NGC 460  
 Type: Neb                      Const: Tuc  
 V mag: 12.5                      Size: 1.9  
 RA: 1.244                      Dec: -73.27

9



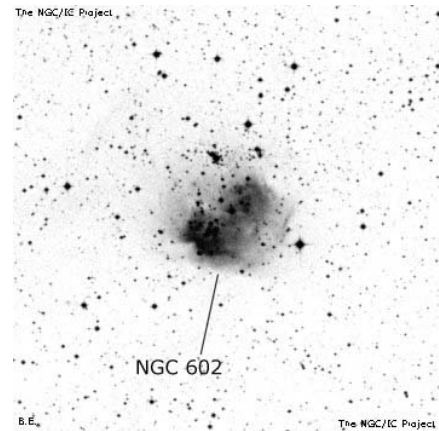
Other Names: NGC 465  
 Type: OC                      Const: Tuc  
 V mag: 11.5                      Size: 5  
 RA: 1.261                      Dec: -73.33

16



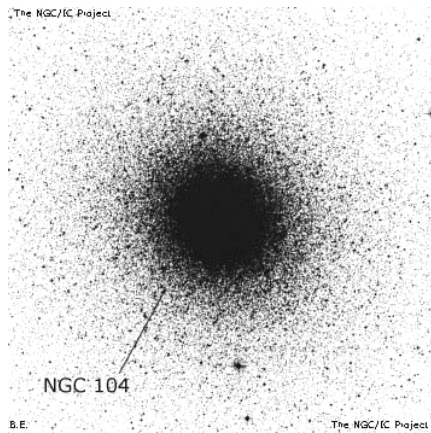
Other Names: Lindsay 104  
 Type: Neb                      Const: Tuc  
 V mag:                      Size: 1.7  
 RA: 1.417                      Dec: -73.32

17



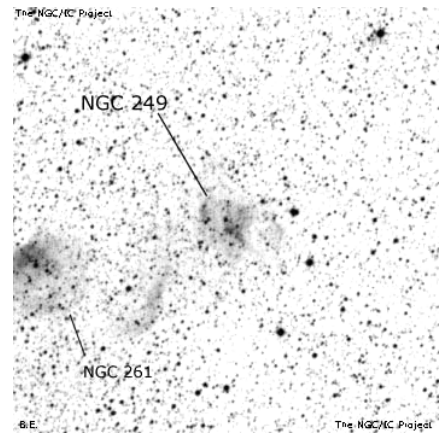
Other Names: NGC 602  
 Type: Neb                      Const: Hyi  
 V mag:                      Size: 3.4  
 RA: 1.491                      Dec: -73.55

18



Other Names: Lac I.1, NGC104  
 Type: GC                      Const: Tuc  
 V mag: 4                      Size: 50  
 RA: 0.401                      Dec: -72.07

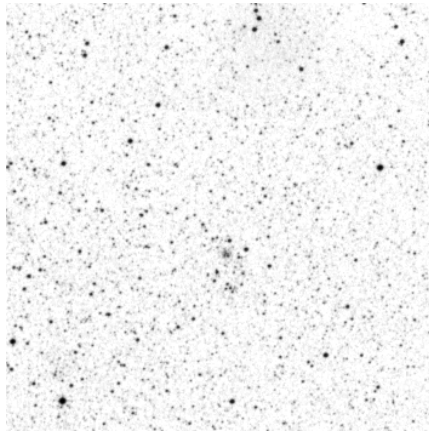
19



Other Names: NGC 249  
 Type: Neb                      Const: Tuc  
 V mag:                      Size: 1.1  
 RA: 0.759                      Dec: -73.07

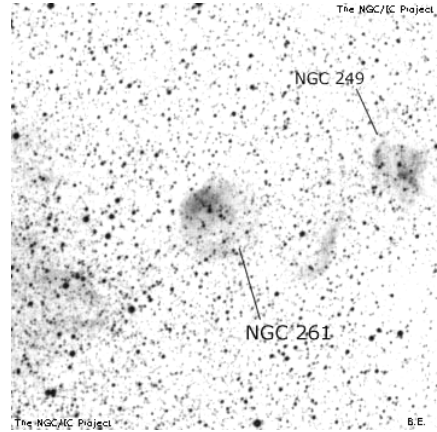


20



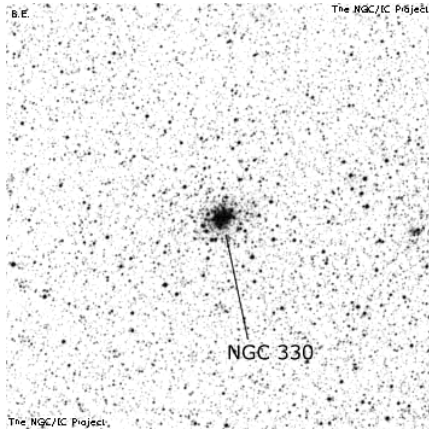
Other Names: Dun 22, Lindsay 40  
 Type: OC                      Const: Tuc  
 V mag:                        Size: 1.8  
 RA: 0.845                    Dec: -72.97

21



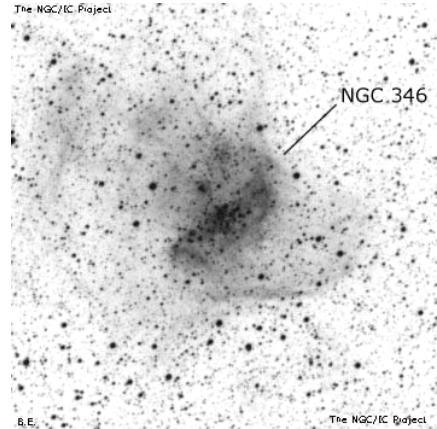
Other Names: NGC 261  
 Type: Neb                      Const: Tuc  
 V mag:                        Size: 1.3  
 RA: 0.774                    Dec: -73.10

23



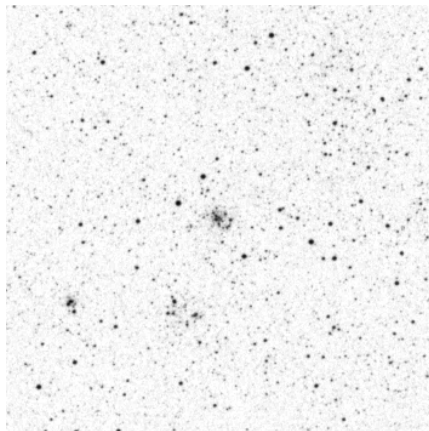
Other Names: NGC 330  
 Type: GC                        Const: Tuc  
 V mag: 9.6                    Size: 1.9  
 RA: 0.938                    Dec: -72.45

25



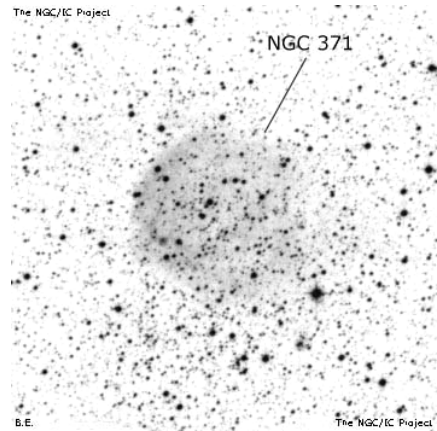
Other Names: NGC 346  
 Type: Neb                      Const: Tuc  
 V mag: 10.3                    Size: 14  
 RA: 0.985                    Dec: -72.17

26  
poss



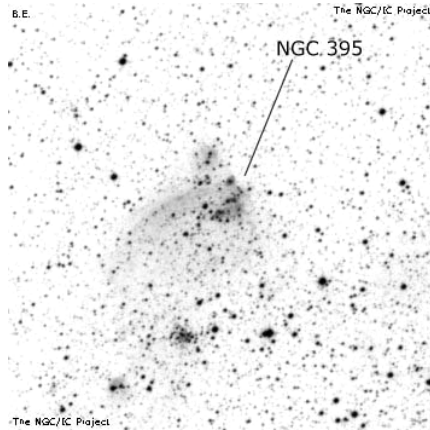
Other Names: IC 1611  
 Type: OC                        Const: Tuc  
 V mag: 12                    Size: 1  
 RA: 0.997                    Dec: -72.32

31



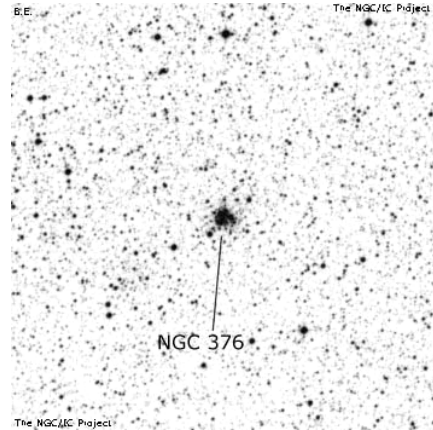
Other Names: NGC 371  
 Type: Neb                      Const: Tuc  
 V mag:                        Size: 7.5  
 RA: 1.058                    Dec: -72.05

35



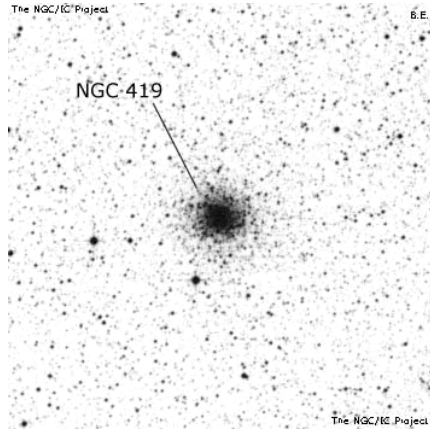
Other Names: NGC 395  
 Type: Neb            Const: Tuc  
 V mag:                Size: 1.5  
 RA: 1.086            Dec: -71.98

36



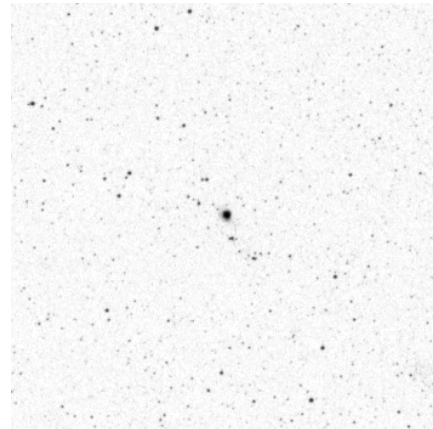
Other Names: NGC 376  
 Type: OC             Const: Tuc  
 V mag: 10.9         Size: 1.8  
 RA: 1.065            Dec: -72.82

38



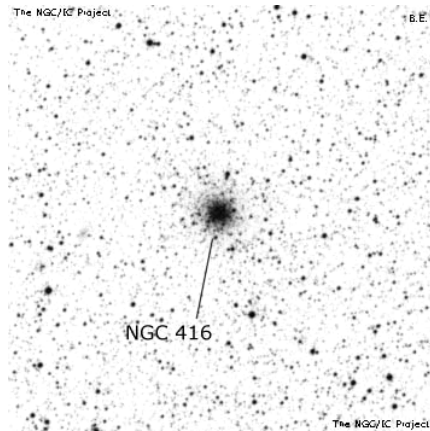
Other Names: NGC 419  
 Type: GC             Const: Tuc  
 V mag: 11.2         Size: 2.6  
 RA: 1.138            Dec: -72.88

39



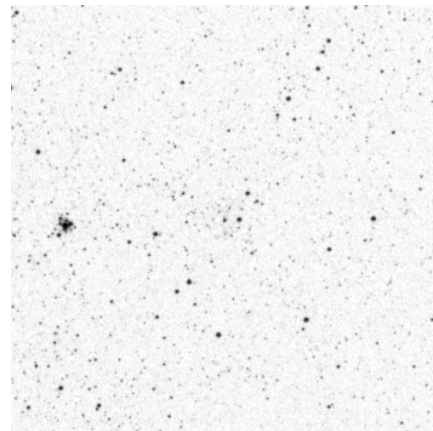
Other Names: IC 1644  
 Type: Neb            Const: Tuc  
 V mag:                Size: 0.8  
 RA: 1.153            Dec: -73.18

43



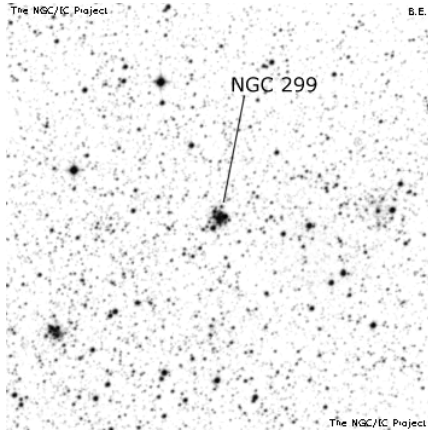
Other Names: NGC 416  
 Type: GC             Const: Tuc  
 V mag: 12.6         Size: 1.1  
 RA: 1.133            Dec: -72.35

50  
poss



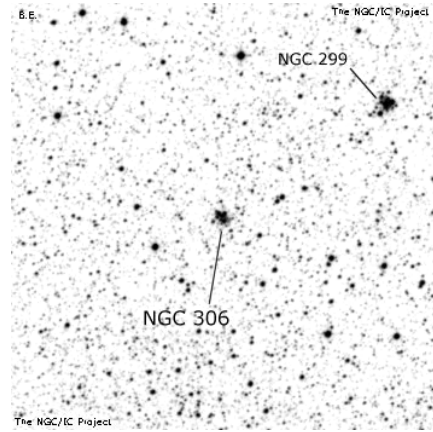
Other Names: Kron 30  
 Type: OC             Const: Tuc  
 V mag:                Size: 1.5  
 RA: 0.877            Dec: -72.19

51



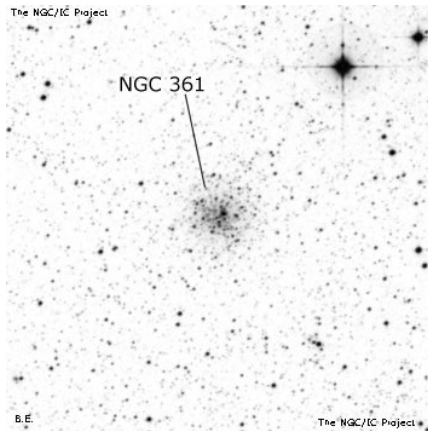
Other Names: NGC 299  
 Type: Neb                      Const: Tuc  
 V mag:                              Size: 0.9  
 RA: 0.890                      Dec: -72.18

52



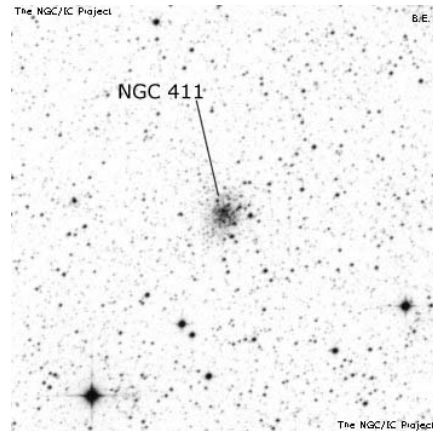
Other Names: NGC 306  
 Type: Neb                      Const: Tuc  
 V mag:                              Size: 1.1  
 RA: 0.904                      Dec: -72.23

54



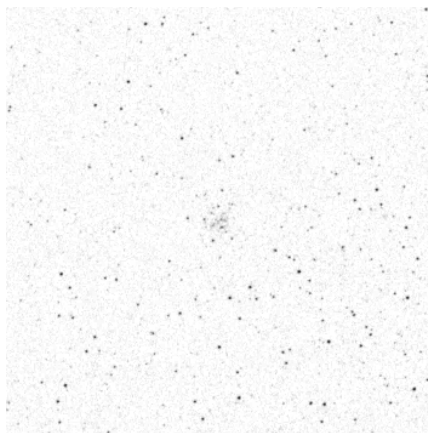
Other Names: NGC 361  
 Type: OC                        Const: Tuc  
 V mag:                              Size: 1.5  
 RA: 1.036                      Dec: -71.60

57



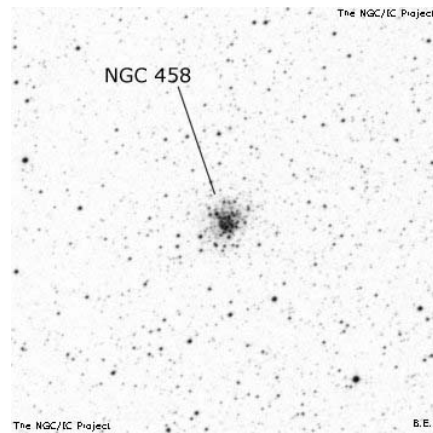
Other Names: NGC 411  
 Type: OC                        Const: Tuc  
 V mag:                              Size: 2.1  
 RA: 1.132                      Dec: -71.77

59



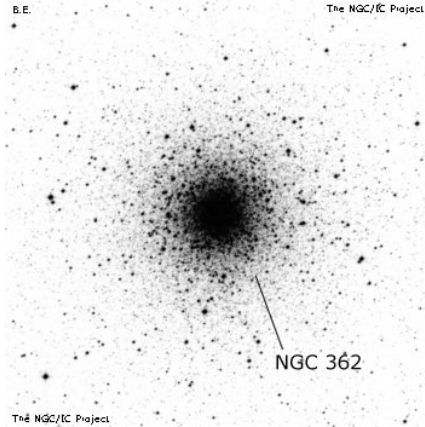
Other Names: IC 1655  
 Type: OC                        Const: Tuc  
 V mag:                              Size: 1  
 RA: 1.198                      Dec: -71.32

60



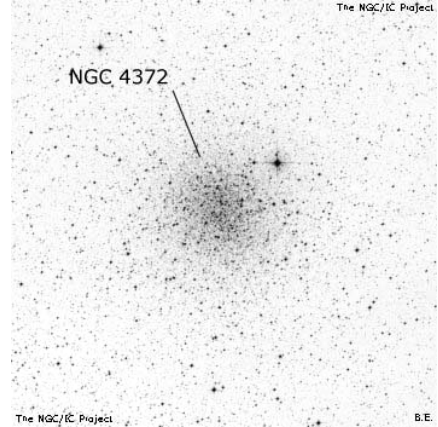
Other Names: NGC 458  
 Type: OC                        Const: Tuc  
 V mag:                              Size: 2.6  
 RA: 1.248                      Dec: -71.55

62



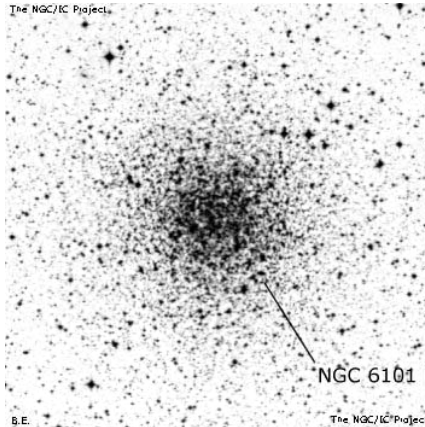
Other Names: NGC 362  
 Type: GC                      Const: Tuc  
 V mag: 6.8                    Size: 12.9  
 RA: 1.054                    Dec: -70.83

67



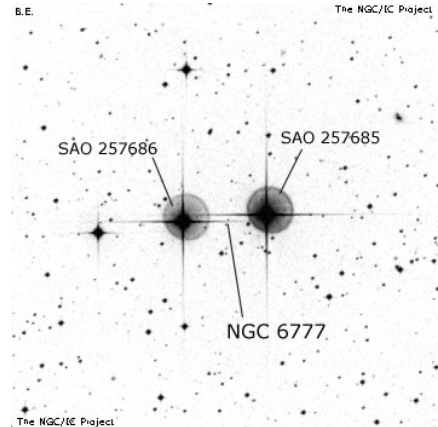
Other Names: NGC 4372  
 Type: GC                      Const: Mus  
 V mag: 7.2                    Size: 18.6  
 RA: 12.436                  Dec: -72.70

68



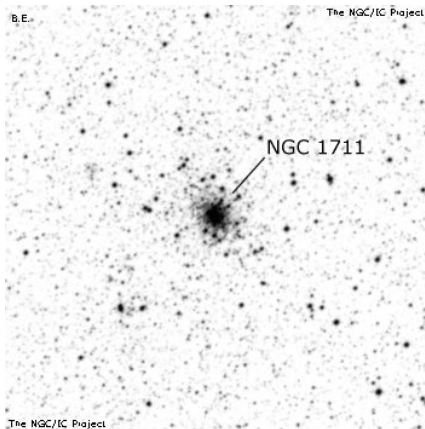
Other Names: NGC 6101  
 Type: GC                      Const: Aps  
 V mag: 9.2                    Size: 10.7  
 RA: 16.430                  Dec: -72.20

69



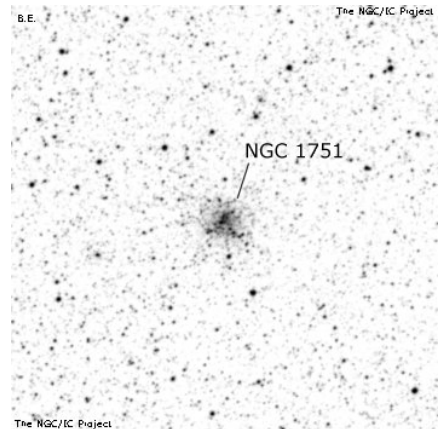
Other Names: Lac I.13, NGC 6777  
 Type: Ast                      Const: Pav  
 V mag: 8                      Size: 2  
 RA: 19.447                  Dec: -71.50

73



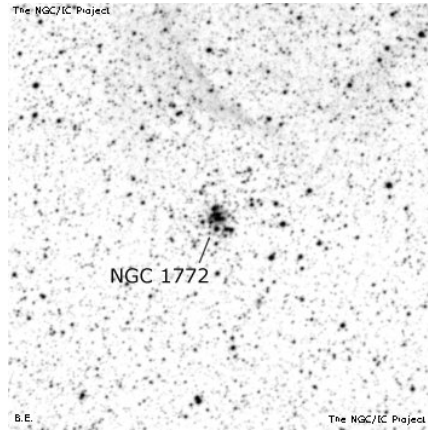
Other Names: NGC 1711  
 Type: OC                      Const: Men  
 V mag: 10.1                  Size: 3.4  
 RA: 4.843                    Dec: -69.98

78



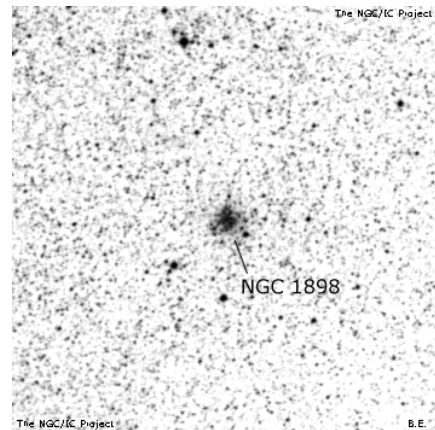
Other Names: NGC 1751  
 Type: OC                      Const: Men  
 V mag: 14.5                  Size: 1.6  
 RA: 4.903                    Dec: -69.80

**81**  
poss



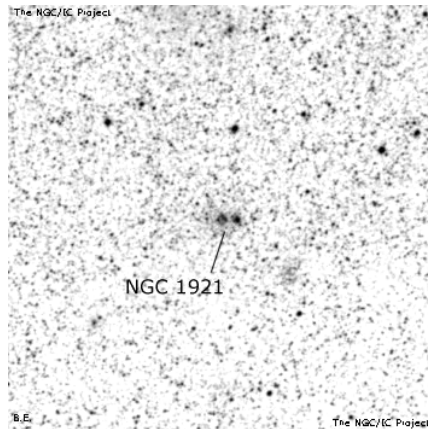
Other Names: NGC 1772  
Type: Neb                      Const: Dor  
V mag: 11                      Size: 1.5  
RA: 4.948                      Dec: -69.56

**88**



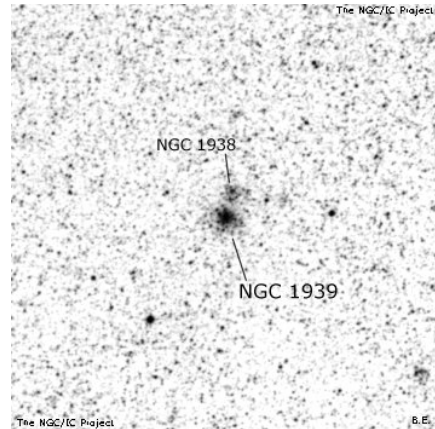
Other Names: NGC 1898  
Type: OC                      Const: Dor  
V mag: 11.9                      Size: 1.6  
RA: 5.278                      Dec: -69.65

**89**  
poss



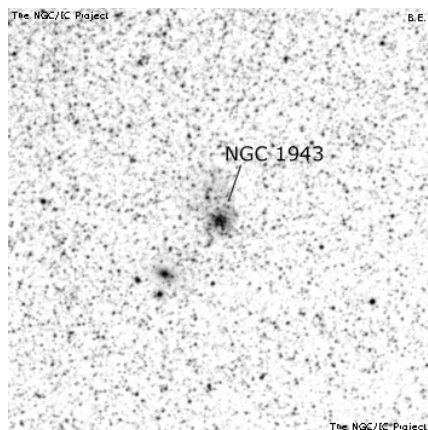
Other Names: NGC 1921  
Type: GC                      Const: Dor  
V mag:                      Size: 0.7  
RA: 5.323                      Dec: -69.78

**90**



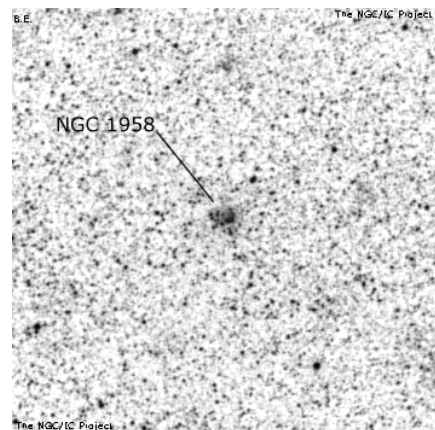
Other Names: NGC 1939  
Type: GC                      Const: Men  
V mag: 12.9                      Size: 0.5  
RA: 5.357                      Dec: -69.93

**91**  
poss



Other Names: NGC 1943  
Type: OC                      Const: Men  
V mag:                      Size: 1.1  
RA: 5.375                      Dec: -70.15

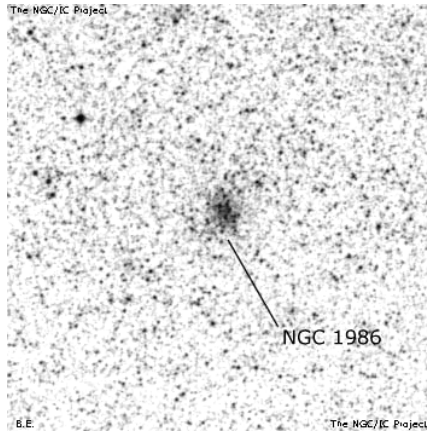
**92**



Other Names: NGC 1958  
Type: GC                      Const: Dor  
V mag: 13                      Size: 0.8  
RA: 5.425                      Dec: -69.83

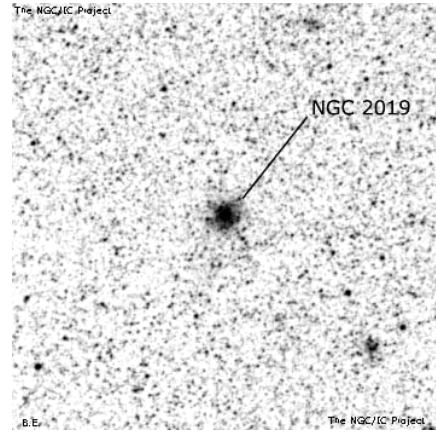


96



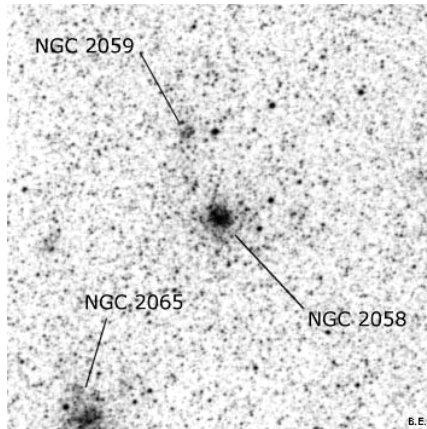
Other Names: NGC 1986  
 Type: GC                      Const: Men  
 V mag: 11.1                      Size: 0.7

99



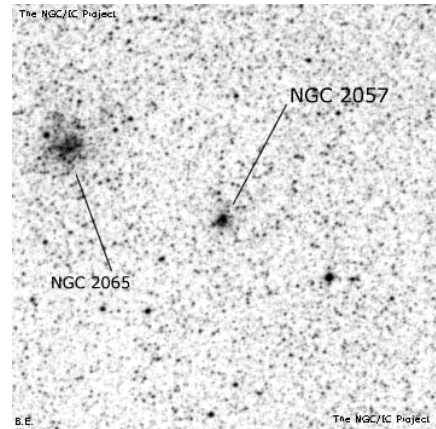
Other Names: NGC 2019  
 Type: GC                      Const: Men  
 V mag: 10.9                      Size: 1  
 RA: 5.533                      Dec: -70.15

103



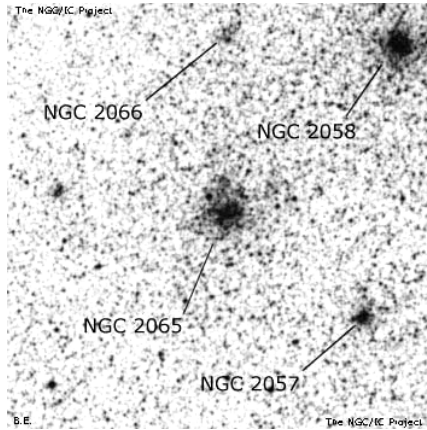
Other Names: NGC 2058  
 Type: OC                      Const: Men  
 V mag: 11.9                      Size: 1.8  
 RA: 5.615                      Dec: -70.15

104  
poss



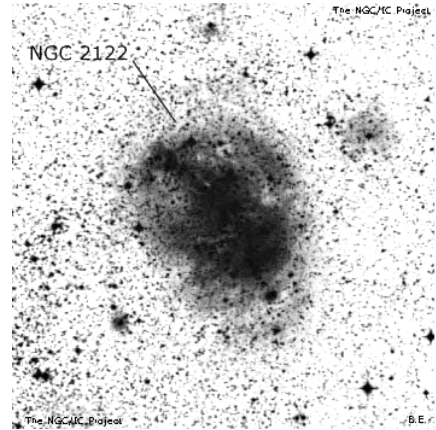
Other Names: NGC 2057  
 Type: OC                      Const: Men  
 V mag: 12.2                      Size: 1.8  
 RA: 5.615                      Dec: -70.27

105



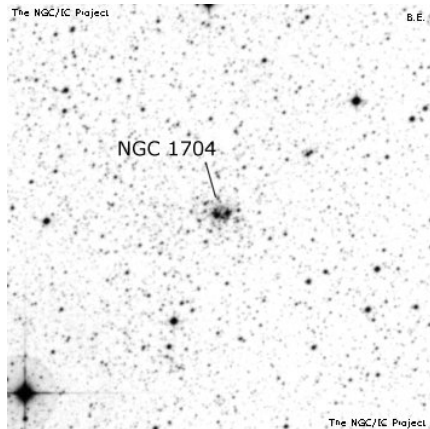
Other Names: NGC 2065  
 Type: OC                      Const: Men  
 V mag: 11.2                      Size: 2.5  
 RA: 5.627                      Dec: -70.23

106



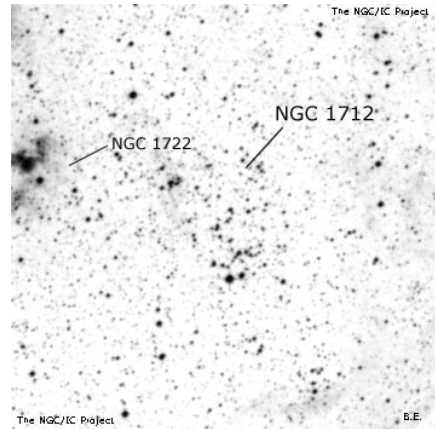
Other Names: NGC 2122  
 Type: Neb                      Const: Men  
 V mag: 10.4                      Size: 6  
 RA: 5.815                      Dec: -70.07

**110**  
poss



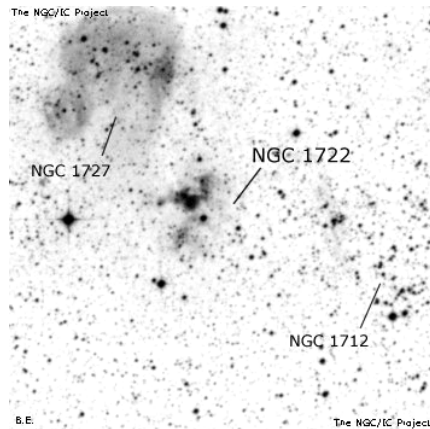
Other Names: NGC 1704  
Type: OC                      Const: Dor  
V mag: 11.5                  Size: 1.7  
RA: 4.832                    Dec: -69.75

**112**



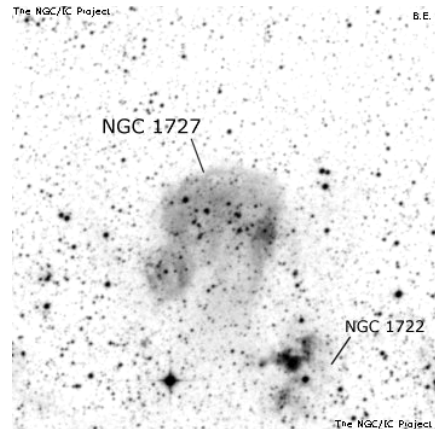
Other Names: NGC 1712  
Type: Neb                    Const: Dor  
V mag:                        Size: 2.6  
RA: 4.849                    Dec: -69.40

**112**



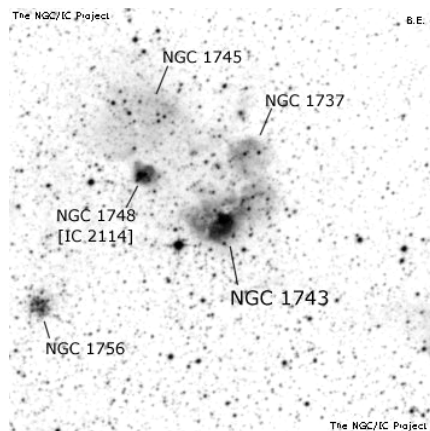
Other Names: NGC 1722  
Type: Neb                    Const: Dor  
V mag: 13.2                  Size: 1  
RA: 4.864                    Dec: -69.40

**113**



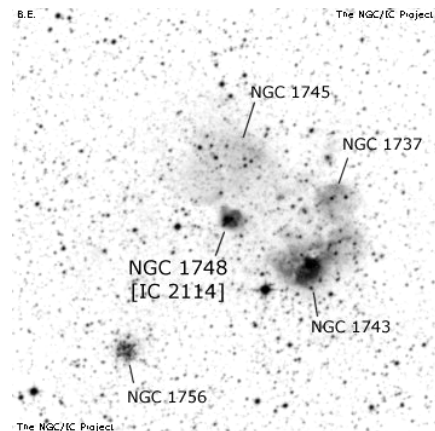
Other Names: NGC 1727  
Type: Neb                    Const: Dor  
V mag: 11.1                  Size: 2.5  
RA: 4.870                    Dec: -69.33

**114**



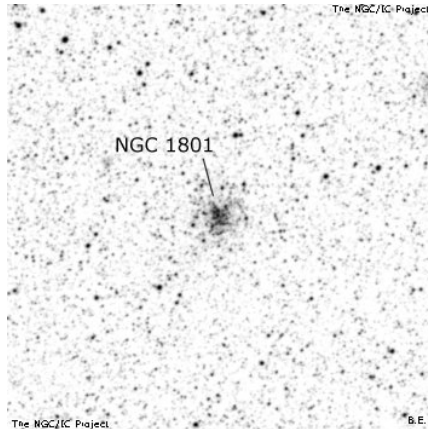
Other Names: NGC 1743  
Type: Neb                    Const: Dor  
V mag:                        Size: 2  
RA: 4.901                    Dec: -69.20

**114**



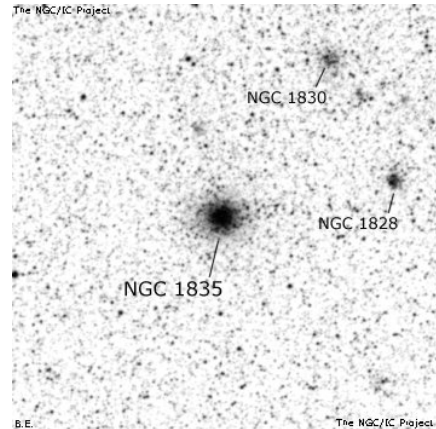
Other Names: NGC 1748  
Type: Neb                    Const: Dor  
V mag:                        Size: 0.5  
RA: 4.907                    Dec: -69.18

**115**  
poss



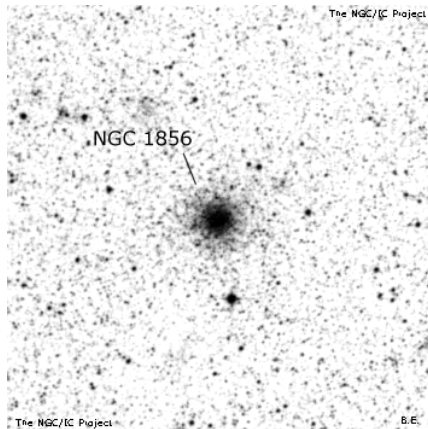
Other Names: NGC 1801  
Type: OC                      Const: Dor  
V mag: 12.2                  Size: 2.1  
RA: 5.010                    Dec: -69.61

**116**



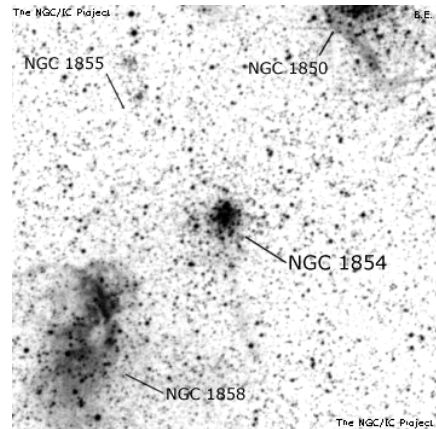
Other Names: NGC 1835  
Type: GC                      Const: Dor  
V mag: 10.6                  Size: 1.2  
RA: 5.085                    Dec: -69.40

**118**



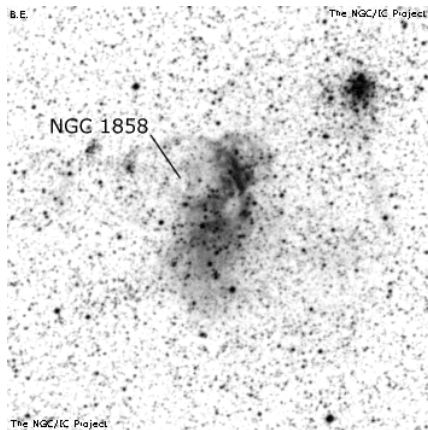
Other Names: NGC 1856  
Type: GC                      Const: Dor  
V mag: 10.1                  Size: 1.8  
RA: 5.158                    Dec: -69.12

**119**



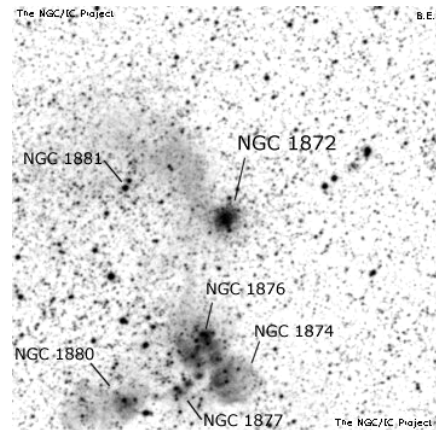
Other Names: NGC 1854  
Type: GC                      Const: Dor  
V mag: 10.4                  Size: 1  
RA: 5.155                    Dec: -68.85

**120**



Other Names: NGC 1858  
Type: Neb                      Const: Dor  
V mag: 9.9                    Size: 5  
RA: 5.166                    Dec: -68.90

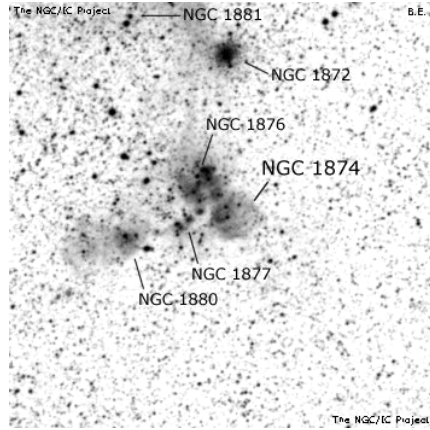
**121**



Other Names: NGC 1872  
Type: GC                      Const: Dor  
V mag: 11                    Size: 1  
RA: 5.220                    Dec: -69.31

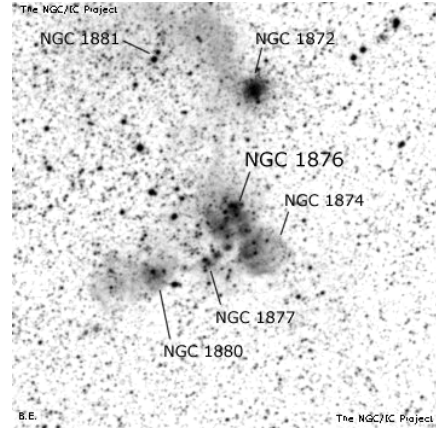


122



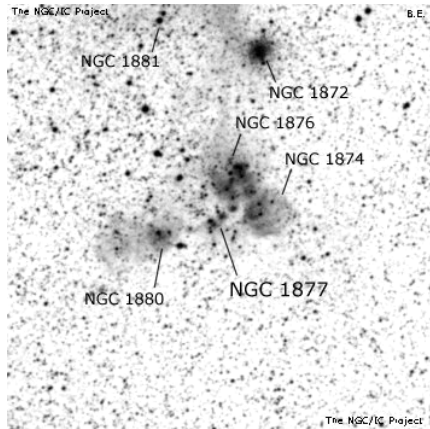
Other Names: NGC 1874  
 Type: Neb                      Const: Dor  
 V mag:                              Size: 1  
 RA: 5.220                        Dec: -69.38

122



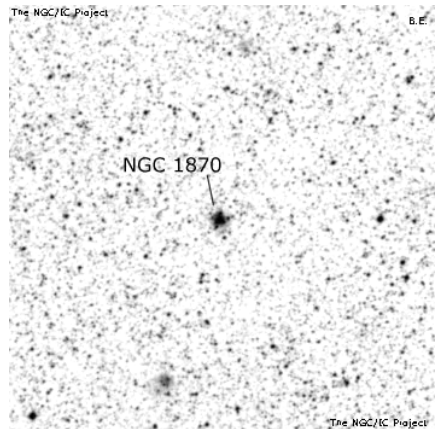
Other Names: NGC 1876  
 Type: Neb                      Const: Dor  
 V mag: 11.7                        Size: 1.5  
 RA: 5.222                        Dec: -69.36

122  
poss



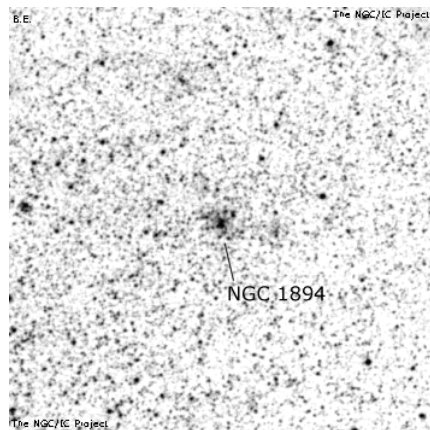
Other Names: NGC 1877  
 Type: Neb                      Const: Dor  
 V mag:                              Size: 3  
 RA: 5.223                        Dec: -69.38

123  
poss



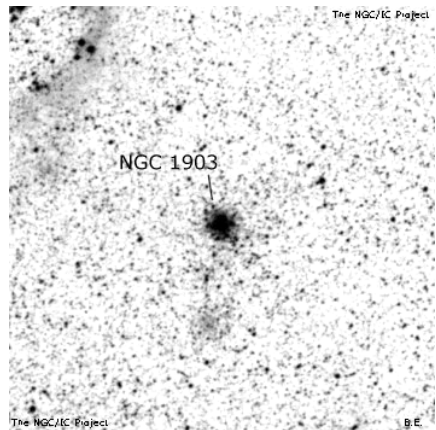
Other Names: NGC 1870  
 Type: GC                        Const: Dor  
 V mag: 11.3                        Size: 0.5  
 RA: 5.219                        Dec: -69.12

125  
poss



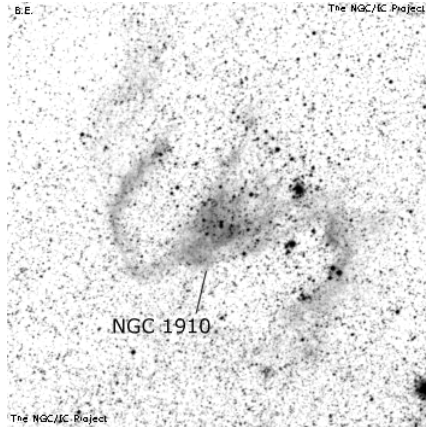
Other Names: NGC 1894  
 Type: OC                        Const: Dor  
 V mag: 12.2                        Size: 0.8  
 RA: 5.264                        Dec: -69.47

127



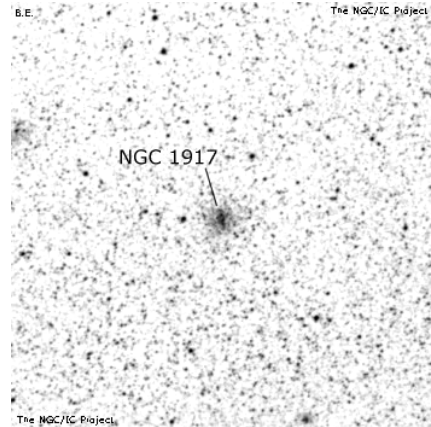
Other Names: NGC 1903  
 Type: GC                        Const: Dor  
 V mag: 11.9                        Size: 1  
 RA: 5.289                        Dec: -69.39

129



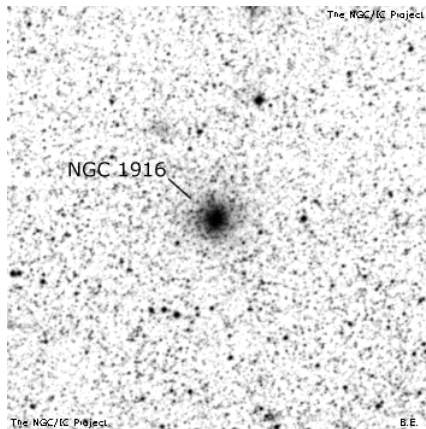
Other Names: NGC 1910  
 Type: Neb                      Const: Dor  
 V mag: 11.2                      Size: 9  
 RA: 5.312                      Dec: -69.22

130  
poss



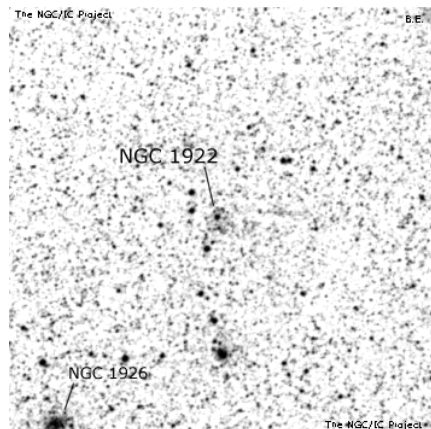
Other Names: NGC 1917  
 Type: GC                      Const: Dor  
 V mag: 12.3                      Size: 1.5  
 RA: 5.317                      Dec: -68.98

131



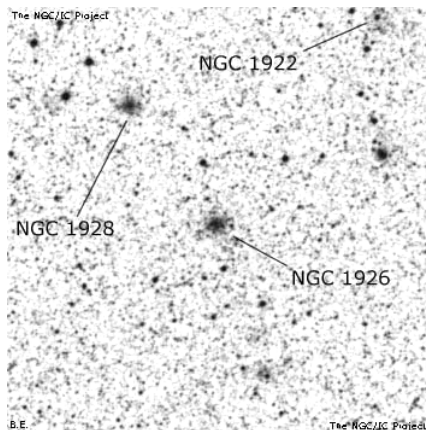
Other Names: NGC 1916  
 Type: GC                      Const: Dor  
 V mag: 10.4                      Size: 1.1  
 RA: 5.310                      Dec: -69.41

131  
poss



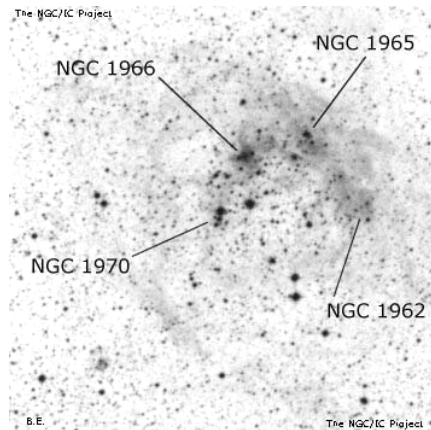
Other Names: NGC 1922  
 Type: OC                      Const: Dor  
 V mag: 11.5                      Size: 0.5  
 RA: 5.330                      Dec: -69.43

131



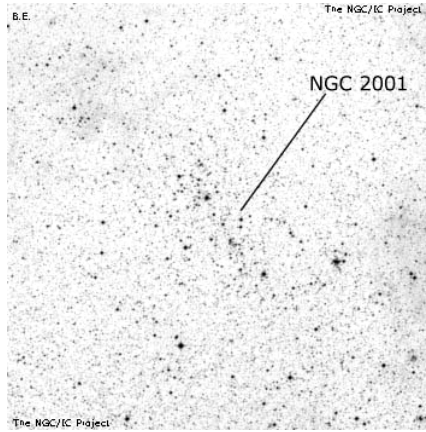
Other Names: NGC 1926  
 Type: GC                      Const: Dor  
 V mag: 11.8                      Size: 1  
 RA: 5.343                      Dec: -69.53

136



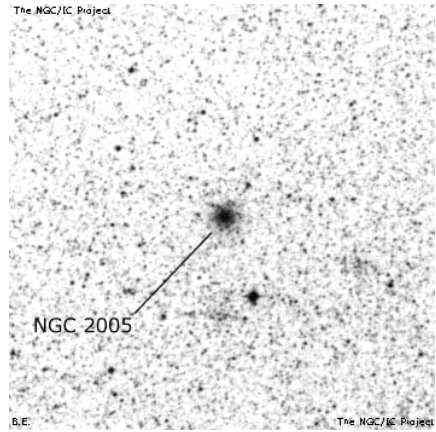
Other Names: NGC 1970  
 Type: OC                      Const: Dor  
 V mag:                      Size: 0.5  
 RA: 5.447                      Dec: -68.83

136



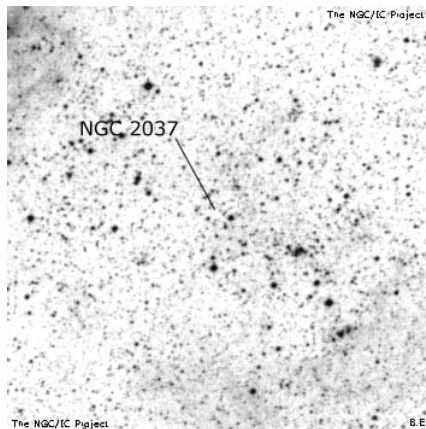
Other Names: NGC 2001  
 Type: OC                      Const: Dor  
 V mag:                        Size: 1.7  
 RA: 5.484                    Dec: -68.77

138



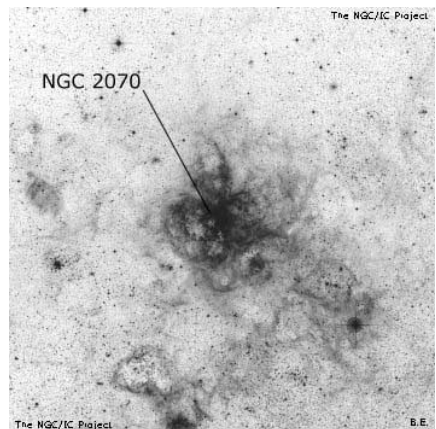
Other Names: NGC 2005  
 Type: GC                      Const: Dor  
 V mag: 11.6                 Size: 1.8  
 RA: 5.503                    Dec: -69.75

141  
poss



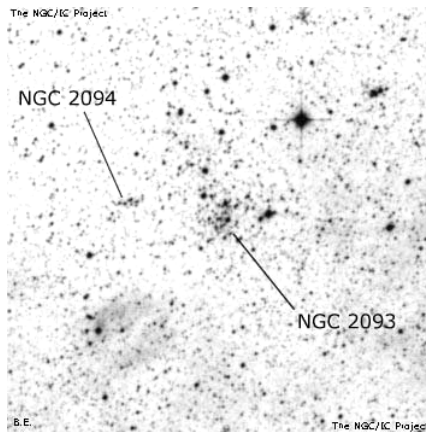
Other Names: NGC 2037  
 Type: OC                      Const: Dor  
 V mag: 10.3                 Size: 0.5  
 RA: 5.584                    Dec: -69.72

142



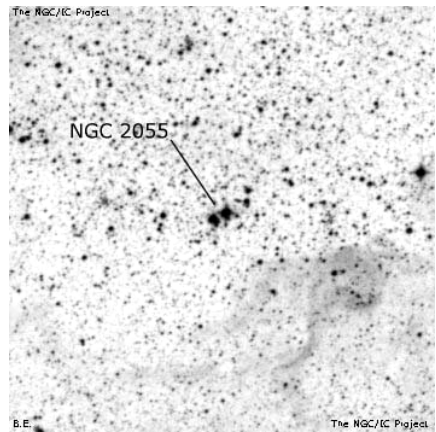
Other Names: Lac I.2, NGC 2070  
 Type: Neb                    Const: Dor  
 V mag: 6.5                    Size: 40  
 RA: 5.645                    Dec: -69.10

144  
poss



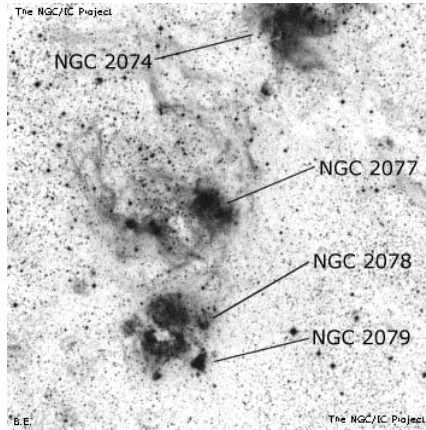
Other Names: NGC 2093  
 Type: Neb                    Const: Dor  
 V mag: 11.6                 Size: 1.7  
 RA: 5.697                    Dec: -68.92

145



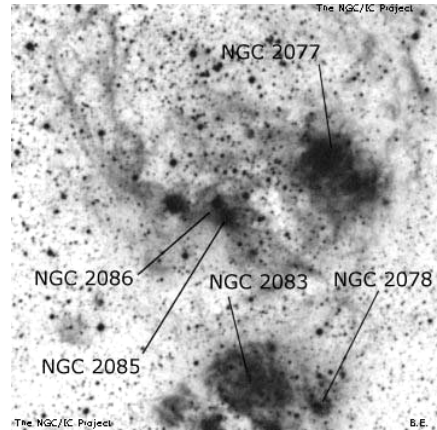
Other Names: NGC 2055  
 Type: OC                      Const: Dor  
 V mag: 8.4                    Size: 0.6  
 RA: 5.613                    Dec: -69.48

145



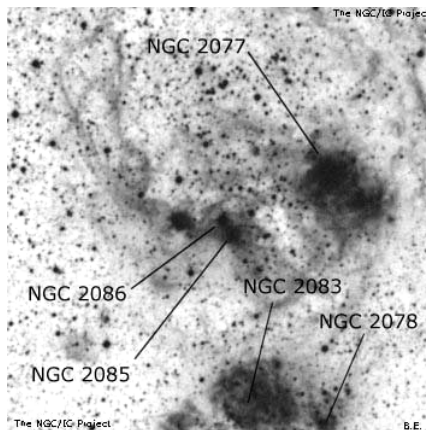
Other Names: NGC 2077  
 Type: Neb            Const: Dor  
 V mag:                Size: 15  
 RA: 5.660            Dec: -69.66

145



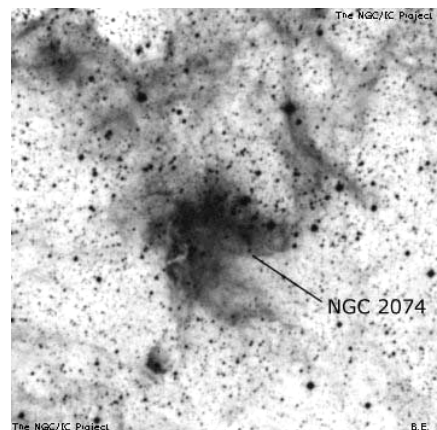
Other Names: NGC 2085  
 Type: Neb            Const: Dor  
 V mag:                Size: 1  
 RA: 5.669            Dec: -69.67

145



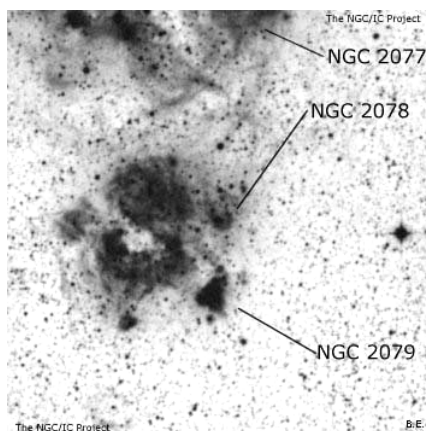
Other Names: NGC 2086  
 Type: Neb            Const: Dor  
 V mag:                Size: 0.9  
 RA: 5.673            Dec: -69.67

146



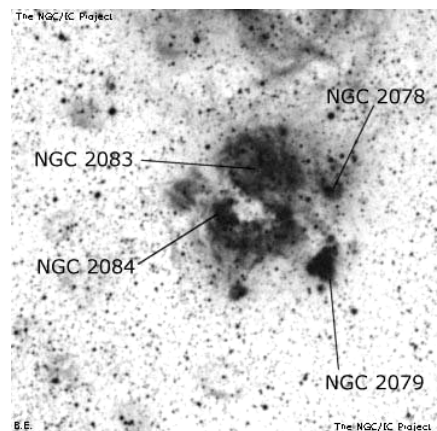
Other Names: NGC 2074  
 Type: Neb            Const: Dor  
 V mag:                Size: 16  
 RA: 5.651            Dec: -69.48

149



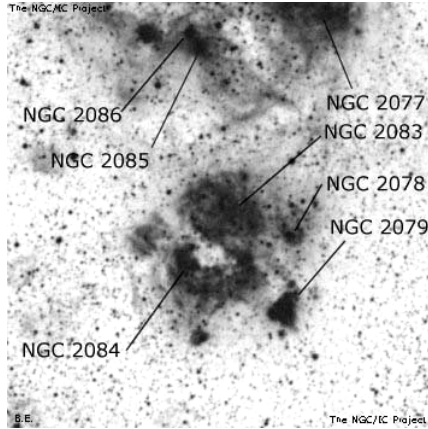
Other Names: NGC 2078  
 Type: Neb            Const: Dor  
 V mag:                Size: 15  
 RA: 5.661            Dec: -69.74

149



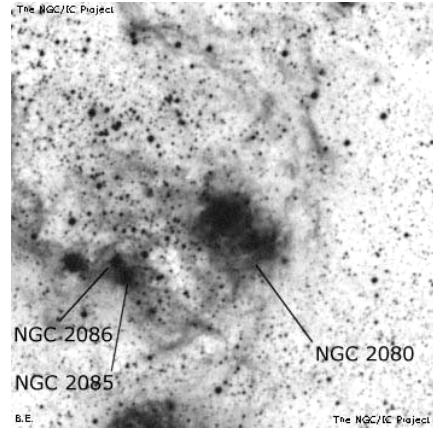
Other Names: NGC 2084  
 Type: Neb            Const: Dor  
 V mag:                Size: 1.7  
 RA: 5.665            Dec: -69.76

149



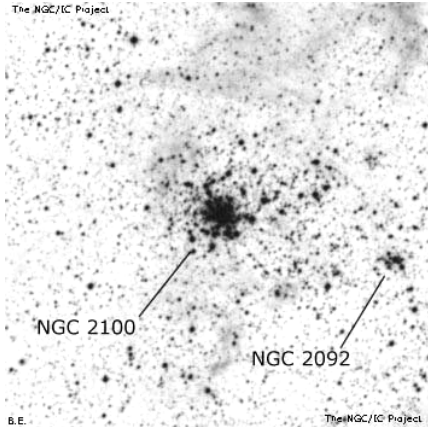
Other Names: NGC 2083  
 Type: Neb                      Const: Dor  
 V mag:                            Size: 2  
 RA: 5.666                        Dec: -69.74

150



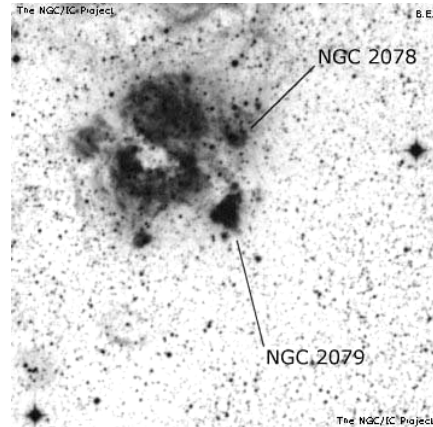
Other Names: NGC 2080  
 Type: Neb                      Const: Dor  
 V mag:                            Size: 15  
 RA: 5.662                        Dec: -69.63

151



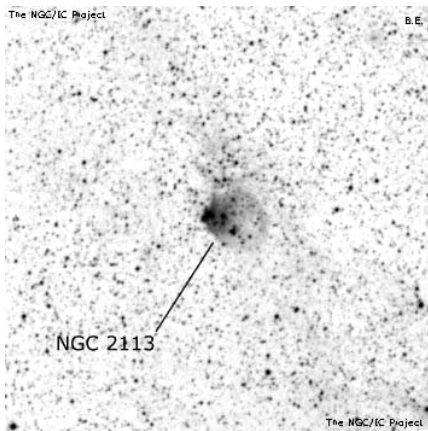
Other Names: NGC 2100  
 Type: OC                        Const: Dor  
 V mag: 9.6                        Size: 2.3  
 RA: 5.703                        Dec: -69.20

152



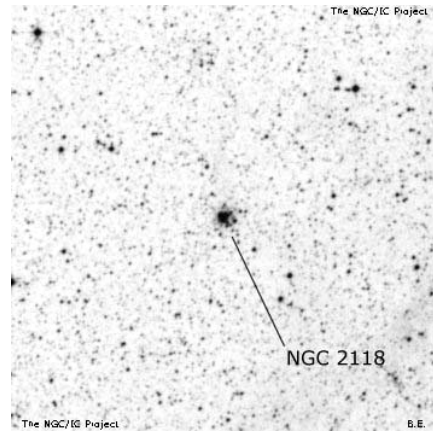
Other Names: NGC 2079  
 Type: Neb                      Const: Dor  
 V mag:                            Size: 15  
 RA: 5.661                        Dec: -69.77

156



Other Names: NGC 2113  
 Type: Neb                      Const: Dor  
 V mag: 12.3                        Size: 1.5  
 RA: 5.757                        Dec: -69.77

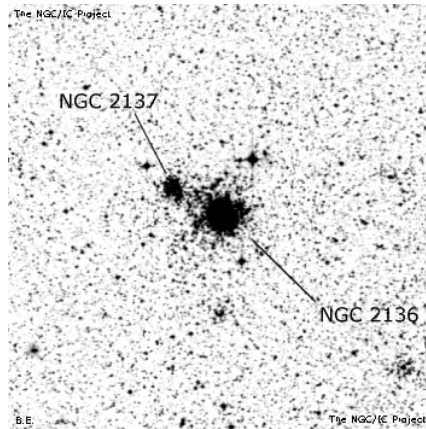
157



Other Names: NGC 2118  
 Type: OC                        Const: Dor  
 V mag: 12                         Size: 0.6  
 RA: 5.794                        Dec: -69.12

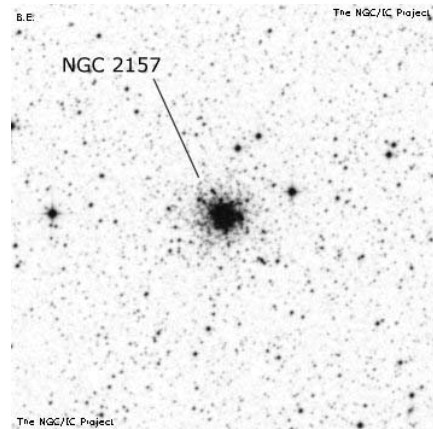


**160**  
poss



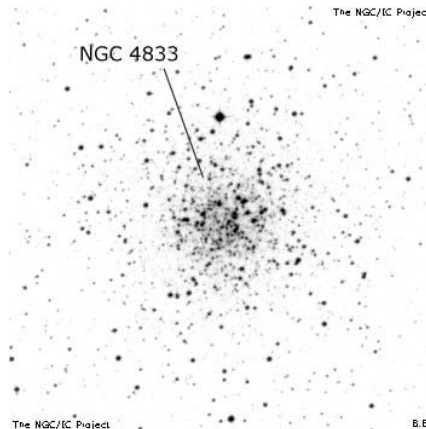
Other Names: NGC 2136  
Type: OC                      Const: Dor  
V mag: 10.5                  Size: 1  
RA: 5.883                    Dec: -69.49

**161**



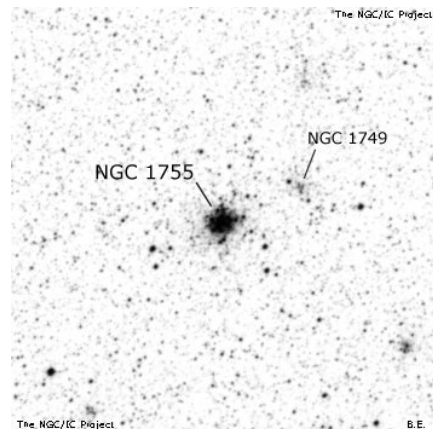
Other Names: NGC 2157  
Type: OC                      Const: Dor  
V mag: 10.2                  Size: 1  
RA: 5.960                    Dec: -69.18

**164**



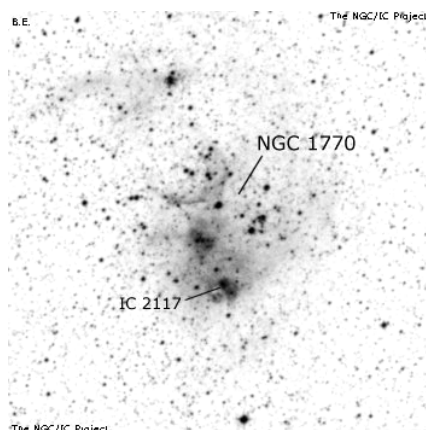
Other Names: Lac I.4, NGC 4833  
Type: GC                      Const: Mus  
V mag: 6.91                  Size: 13.5  
RA: 12.993                  Dec: -70.88

**167**



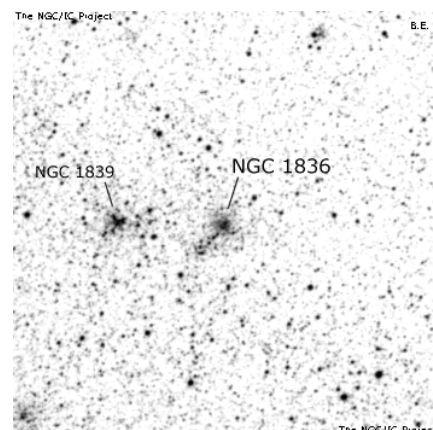
Other Names: NGC 1755  
Type: OC                      Const: Dor  
V mag: 9.9                    Size: 2  
RA: 4.921                    Dec: -68.20

**169**



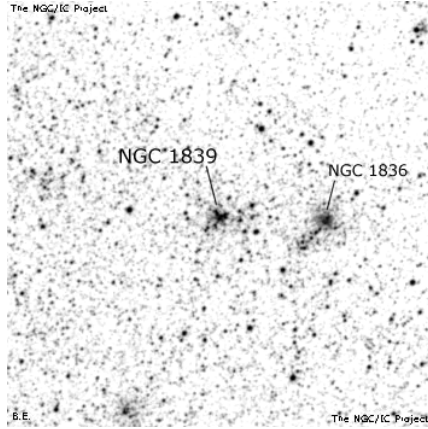
Other Names: NGC 1770  
Type: Neb                      Const: Dor  
V mag:                        Size: 1.6  
RA: 4.954                    Dec: -68.42

**170**  
poss



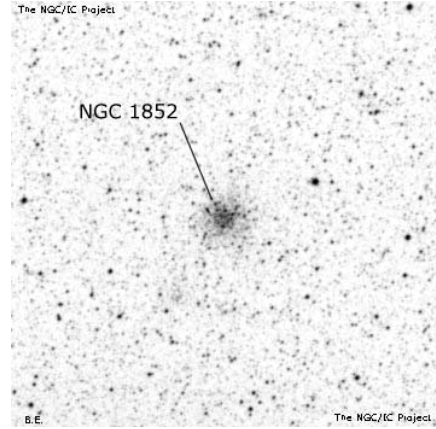
Other Names: NGC 1836  
Type: OC                      Const: Dor  
V mag: 12.2                  Size: 0.8  
RA: 5.093                    Dec: -68.63

170



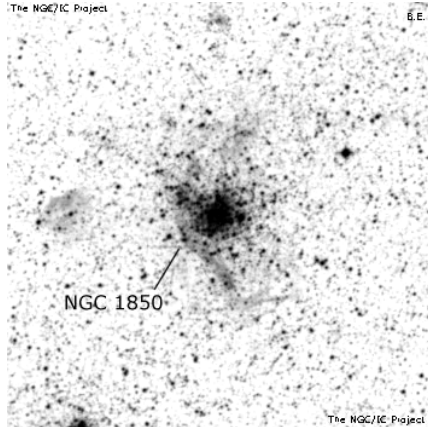
Other Names: NGC 1839  
 Type: OC                      Const: Dor  
 V mag: 11.8                  Size: 0.8  
 RA: 5.101                    Dec: -68.62

171



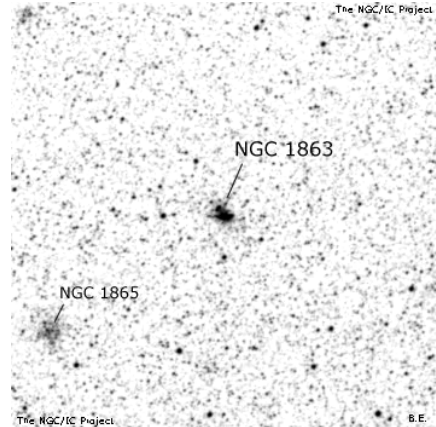
Other Names: NGC 1852  
 Type: OC                      Const: Dor  
 V mag: 12                    Size: 1.9  
 RA: 5.157                    Dec: -67.77

172



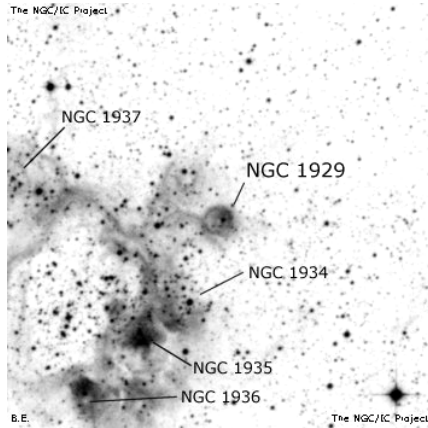
Other Names: NGC 1850  
 Type: GC                      Const: Dor  
 V mag: 9                      Size: 3.4  
 RA: 5.146                    Dec: -68.75

173  
poss



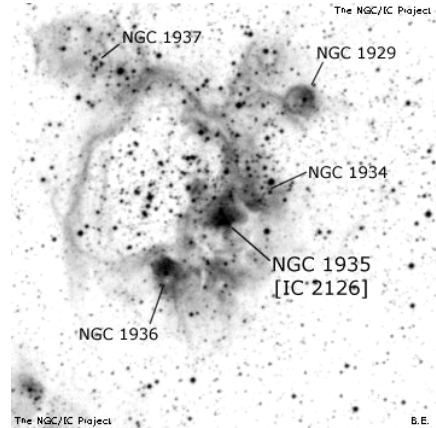
Other Names: NGC 1863  
 Type: GC                      Const: Dor  
 V mag: 11                    Size: 0.5  
 RA: 5.194                    Dec: -68.73

175



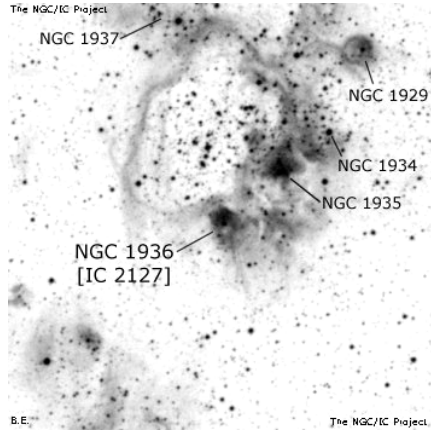
Other Names: NGC 1929  
 Type: Neb                      Const: Dor  
 V mag:                        Size: 20  
 RA: 5.361                    Dec: -67.91

175



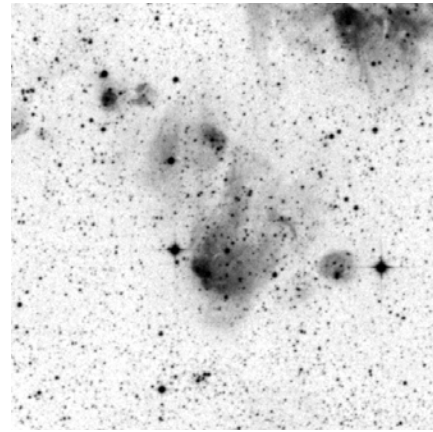
Other Names: NGC 1935  
 Type: Neb                      Const: Dor  
 V mag:                        Size: 1.2  
 RA: 5.366                    Dec: -67.95

175



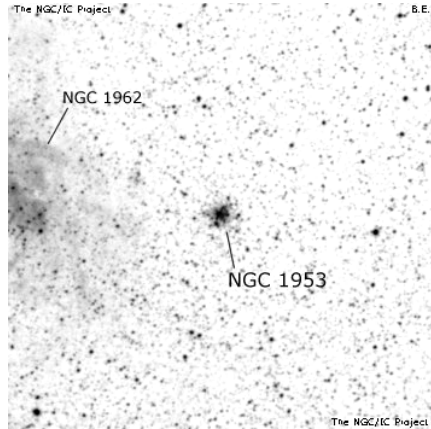
Other Names: NGC 1936  
 Type: Neb                      Const: Dor  
 V mag:                              Size: 1  
 RA: 5.371                          Dec: -67.98

176



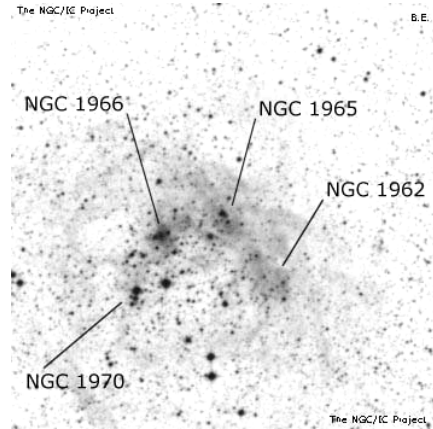
Other Names: IC 2128  
 Type: OC                          Const: Dor  
 V mag:                              Size: 4.8  
 RA: 5.378                          Dec: -68.05

177



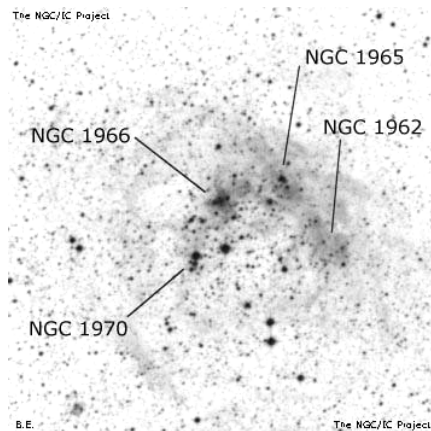
Other Names: NGC 1953  
 Type: GC                          Const: Dor  
 V mag: 11.7                          Size: 0.8  
 RA: 5.424                          Dec: -68.84

177



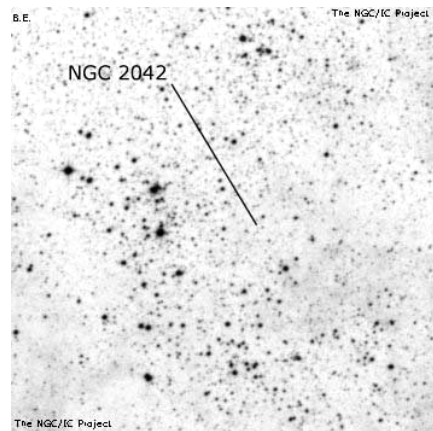
Other Names: NGC 1965  
 Type: OC                          Const: Dor  
 V mag:                              Size: 1.2  
 RA: 5.441                          Dec: -68.81

177



Other Names: NGC 1966  
 Type: OC                          Const: Dor  
 V mag:                              Size: 13  
 RA: 5.446                          Dec: -68.82

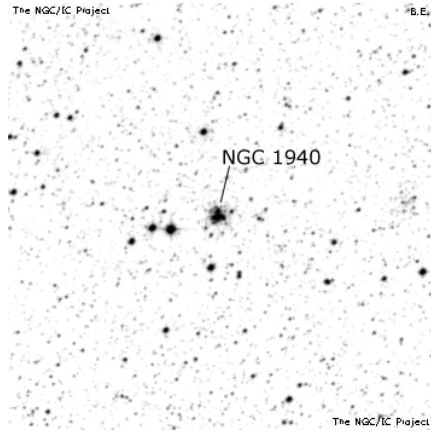
181  
poss



Other Names: NGC 2042  
 Type: OC                          Const: Dor  
 V mag: 9.5                          Size: 8.5  
 RA: 5.598                          Dec: -68.92

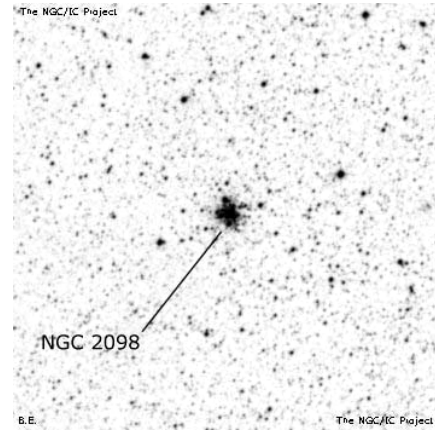


184



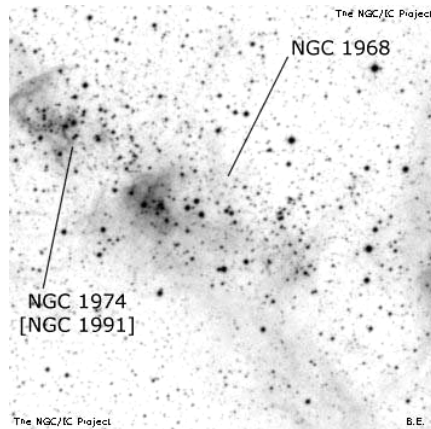
Other Names: NGC 1940  
 Type: OC                      Const: Dor  
 V mag: 11.9                  Size: 1  
 RA: 5.379                    Dec: -67.18

185  
poss



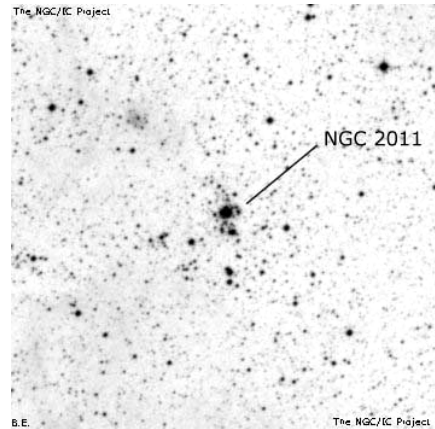
Other Names: NGC 2098  
 Type: OC                      Const: Dor  
 V mag: 10.7                  Size: 1.6  
 RA: 5.708                    Dec: -68.28

188



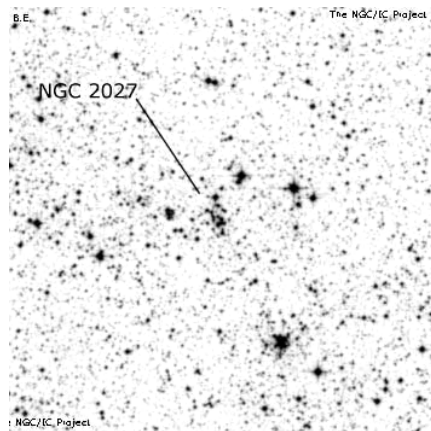
Other Names: NGC 1968  
 Type: Neb                    Const: Dor  
 V mag: 9                      Size: 1.1  
 RA: 5.456                    Dec: -67.45

192



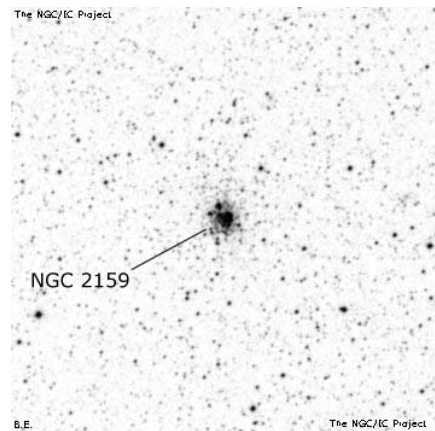
Other Names: NGC 2011  
 Type: OC                      Const: Dor  
 V mag: 10.6                  Size: 1  
 RA: 5.539                    Dec: -67.52

193



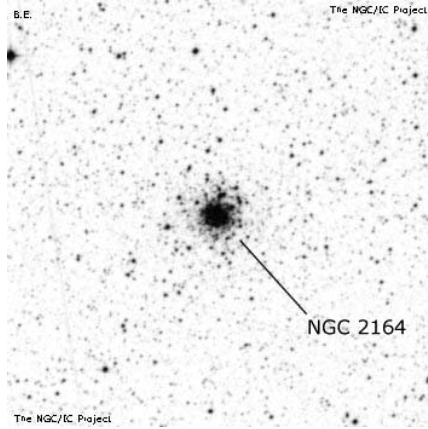
Other Names: NGC 2027  
 Type: OC                      Const: Dor  
 V mag: 11.9                  Size: 0.7  
 RA: 5.583                    Dec: -66.92

193



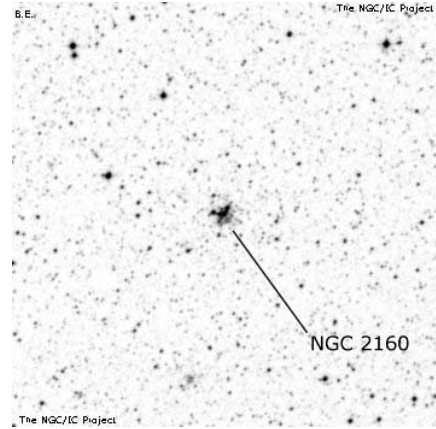
Other Names: NGC 2159  
 Type: OC                      Const: Dor  
 V mag: 11.4                  Size: 1  
 RA: 5.966                    Dec: -68.62

**194**



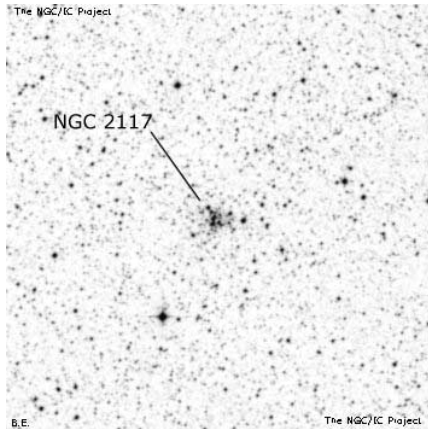
Other Names: NGC 2164  
 Type: OC                      Const: Dor  
 V mag: 10.3                  Size: 1.2  
 RA: 5.982                    Dec: -68.52

**195**  
poss



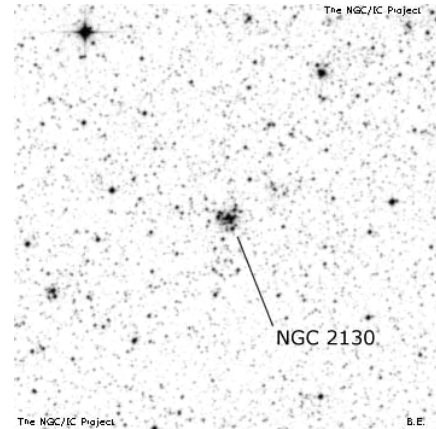
Other Names: NGC 2160  
 Type: OC                      Const: Dor  
 V mag: 12.2                  Size: 0.8  
 RA: 5.970                    Dec: -68.28

**200**  
poss



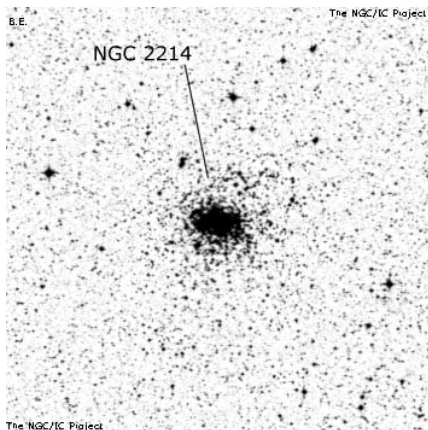
Other Names: NGC 2117  
 Type: OC                      Const: Dor  
 V mag: 12.7                  Size: 0.8  
 RA: 5.796                    Dec: -67.45

**201**  
poss



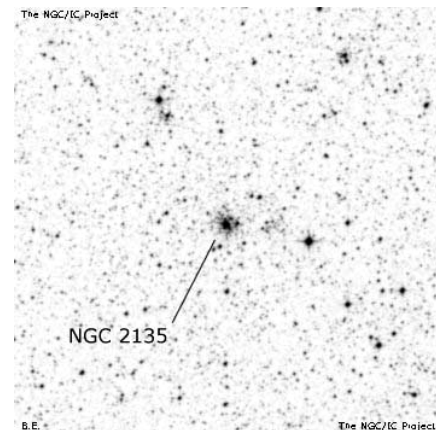
Other Names: NGC 2130  
 Type: OC                      Const: Dor  
 V mag: 12                    Size: 0.4  
 RA: 5.873                    Dec: -67.33

**201**



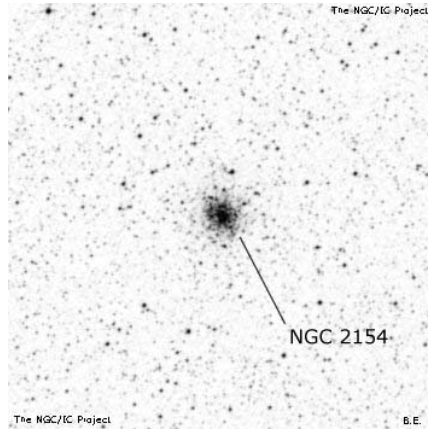
Other Names: NGC 2214  
 Type: OC                      Const: Dor  
 V mag: 10.9                  Size: 3.5  
 RA: 6.215                    Dec: -68.26

**202**  
poss



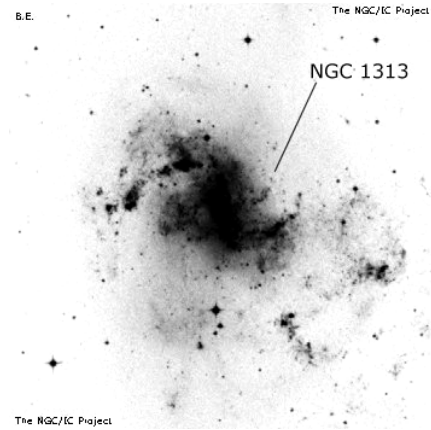
Other Names: NGC 2135  
 Type: OC                      Const: Dor  
 V mag: 12.1                  Size: 0.3  
 RA: 5.893                    Dec: -67.42

203



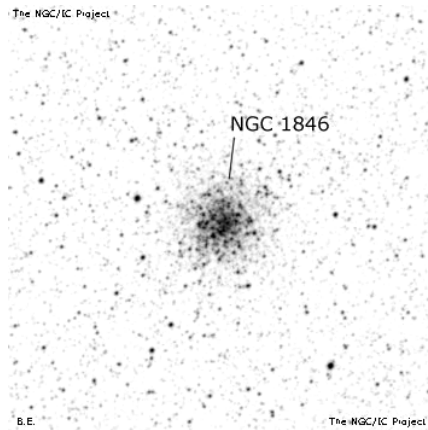
Other Names: NGC 2154  
 Type: OC                      Const: Dor  
 V mag: 11.8                  Size: 1  
 RA: 5.961                    Dec: -67.25

206



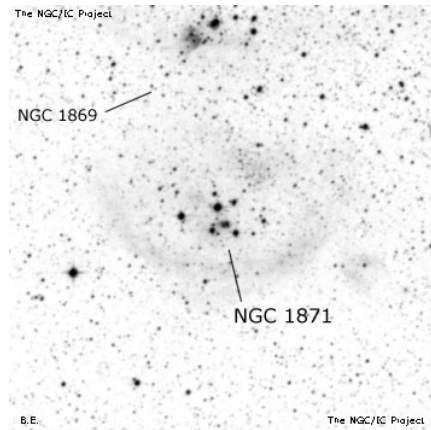
Other Names: NGC 1313  
 Type: Gxy                    Const: Ret  
 V mag: 9.2                    Size: 9.1  
 RA: 3.304                    Dec: -66.48

209



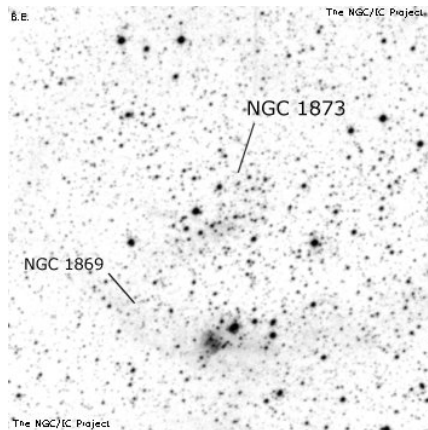
Other Names: NGC 1846  
 Type: OC                      Const: Dor  
 V mag: 11.3                  Size: 2.7  
 RA: 5.126                    Dec: -67.45

210



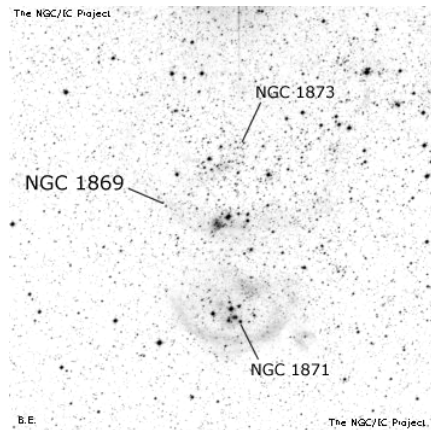
Other Names: NGC 1871  
 Type: Neb                    Const: Dor  
 V mag: 10.1                  Size: 2.1  
 RA: 5.231                    Dec: -67.45

210



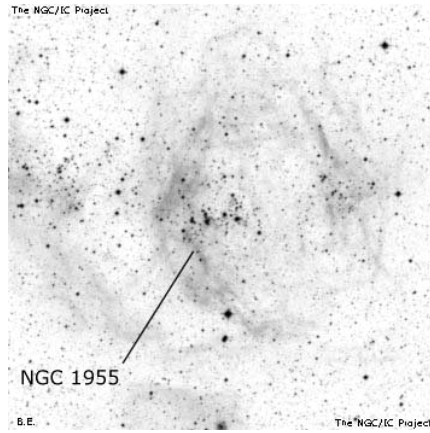
Other Names: NGC 1873  
 Type: Neb                    Const: Dor  
 V mag: 10.4                  Size: 3.5  
 RA: 5.232                    Dec: -67.34

210



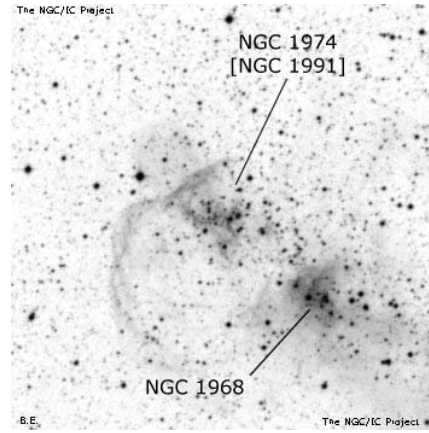
Other Names: NGC 1869  
 Type: Neb                    Const: Dor  
 V mag:                        Size: 14  
 RA: 5.232                    Dec: -67.37

211



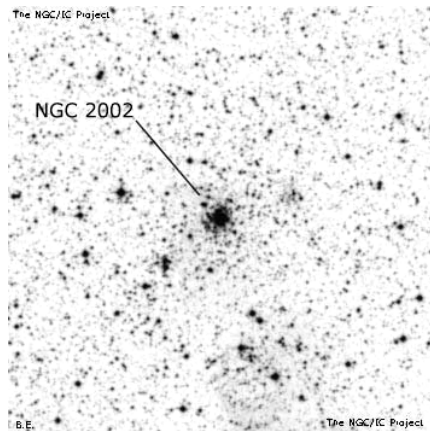
Other Names: NGC 1955  
 Type: Neb                      Const: Dor  
 V mag: 9                        Size: 1.9  
 RA: 5.436                      Dec: -67.48

213



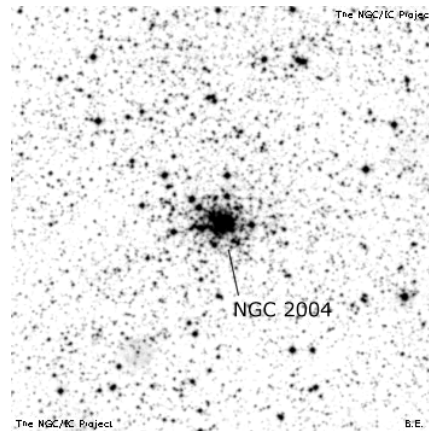
Other Names: NGC 1974  
 Type: Neb                      Const: Dor  
 V mag: 9                        Size: 1.7  
 RA: 5.467                      Dec: -67.42

214



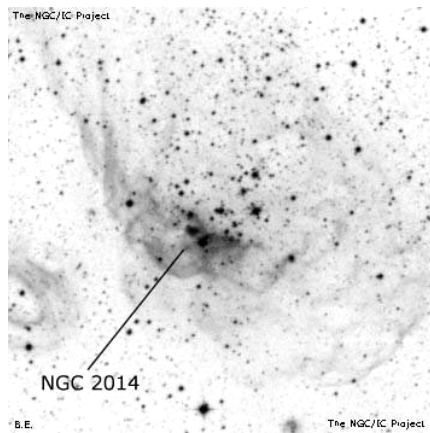
Other Names: NGC 2002  
 Type: OC                        Const: Dor  
 V mag: 10.1                      Size: 2.1  
 RA: 5.506                      Dec: -66.88

216



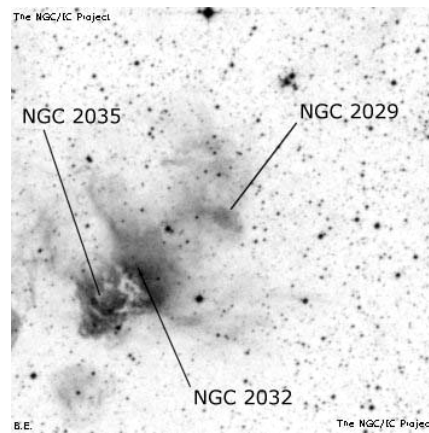
Other Names: NGC 2004  
 Type: OC                        Const: Dor  
 V mag: 9.6                        Size: 2.7  
 RA: 5.511                      Dec: -67.28

217



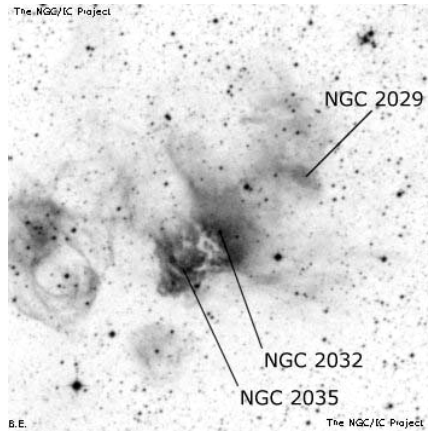
Other Names: NGC 2014  
 Type: Neb                      Const: Dor  
 V mag: 9                        Size: 1.8  
 RA: 5.539                      Dec: -67.68

219



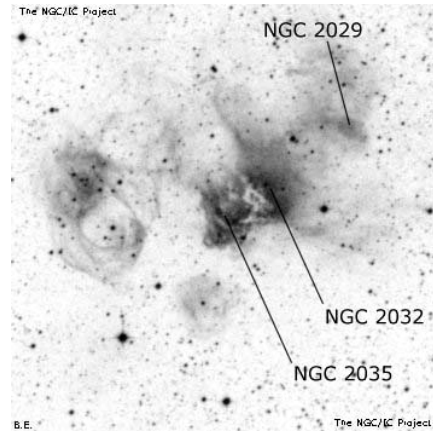
Other Names: NGC 2029  
 Type: Neb                      Const: Dor  
 V mag:                        Size: 1.1  
 RA: 5.583                      Dec: -67.56

219



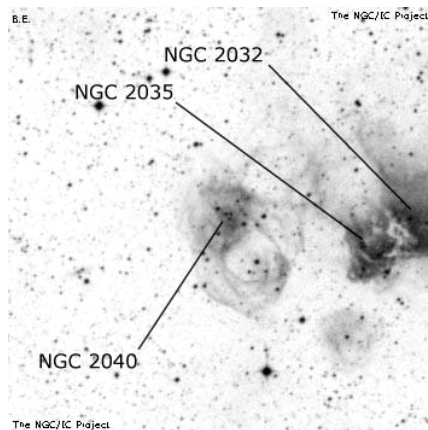
Other Names: NGC 2032  
 Type: Neb                      Const: Dor  
 V mag:                              Size: 2.8  
 RA: 5.589                        Dec: -67.57

219



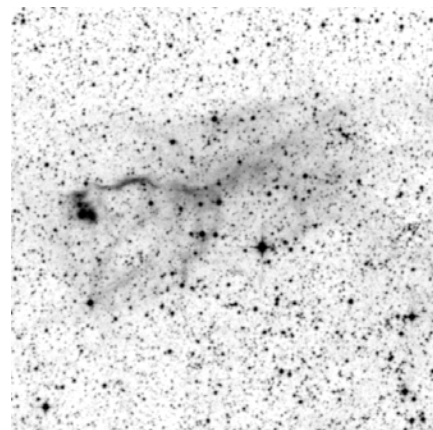
Other Names: NGC 2035  
 Type: Neb                      Const: Dor  
 V mag:                              Size: 3  
 RA: 5.593                        Dec: -67.58

220



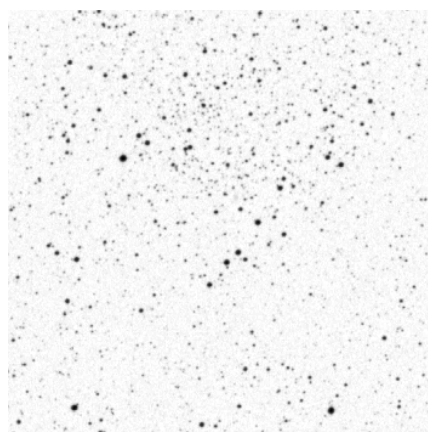
Other Names: NGC 2040  
 Type: Neb                      Const: Dor  
 V mag:                              Size: 3  
 RA: 5.602                        Dec: -67.57

221



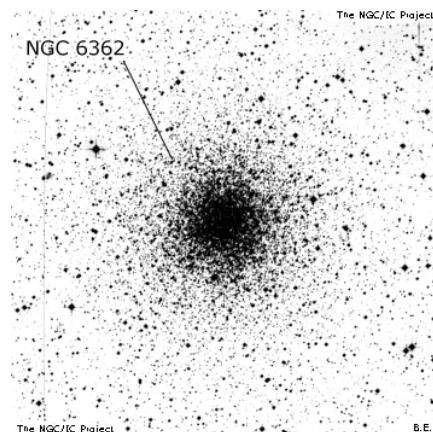
Other Names: Shapley-Lindsay 697  
 Type: OC                        Const: Dor  
 V mag:                              Size: 1.2  
 RA: 5.740                        Dec: -67.13

224



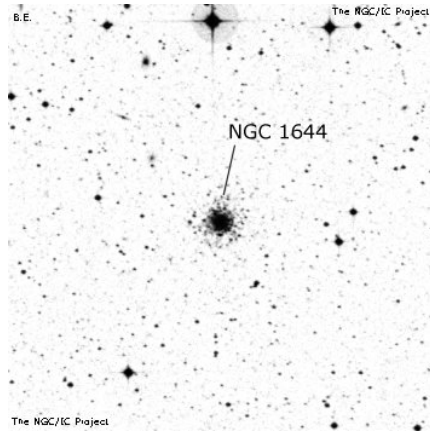
Other Names: Harvard 6  
 Type: OC                        Const: Mus  
 V mag: 10.7                        Size: 5  
 RA: 12.633                        Dec: -68.42

225



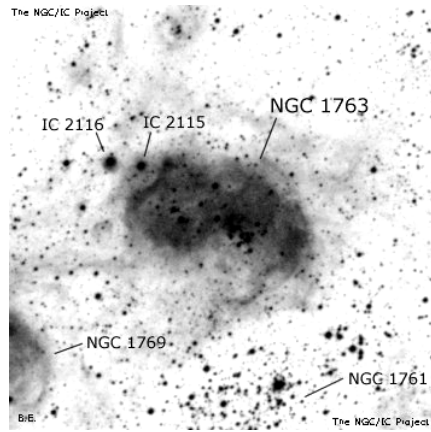
Other Names: NGC 6362  
 Type: GC                        Const: Ara  
 V mag: 8.1                        Size: 10.7  
 RA: 17.532                        Dec: -67.03

226



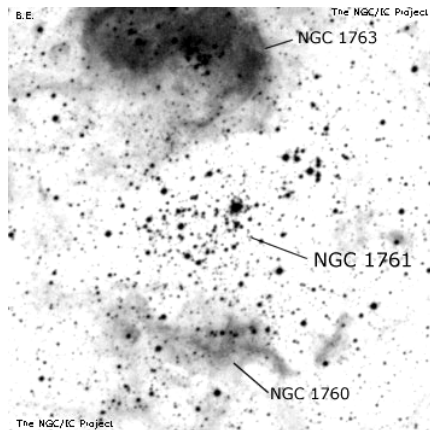
Other Names: NGC 1644  
 Type: OC                      Const: Dor  
 V mag:                        Size: 1.8  
 RA: 4.628                    Dec: -66.18

230



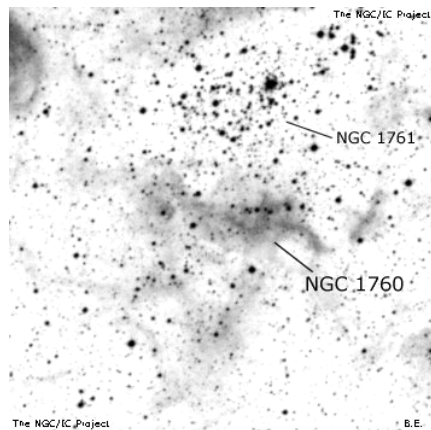
Other Names: NGC 1763  
 Type: Neb                    Const: Dor  
 V mag:                        Size: 5.2  
 RA: 4.946                    Dec: -66.42

231



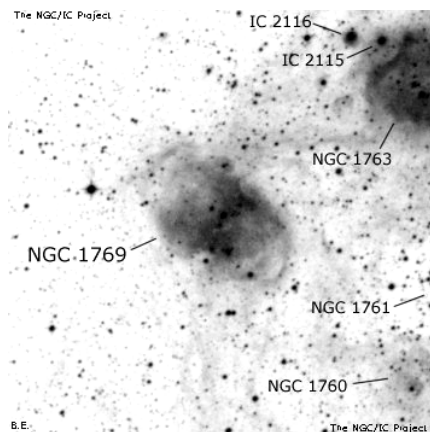
Other Names: NGC 1761  
 Type: Neb                    Const: Dor  
 V mag: 9.9                    Size: 1.2  
 RA: 4.944                    Dec: -66.48

231  
poss



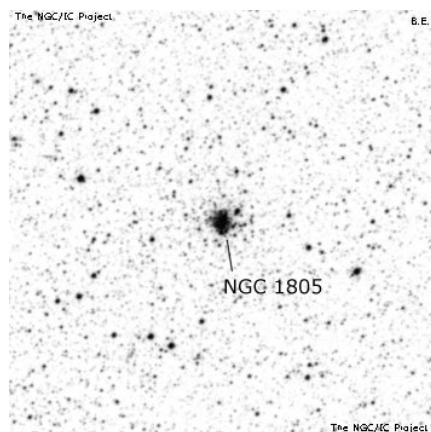
Other Names: NGC 1760  
 Type: Neb                    Const: Dor  
 V mag:                        Size: 5.1  
 RA: 4.946                    Dec: -66.52

232



Other Names: NGC 1769  
 Type: Neb                    Const: Dor  
 V mag:                        Size: 4.1  
 RA: 4.963                    Dec: -66.45

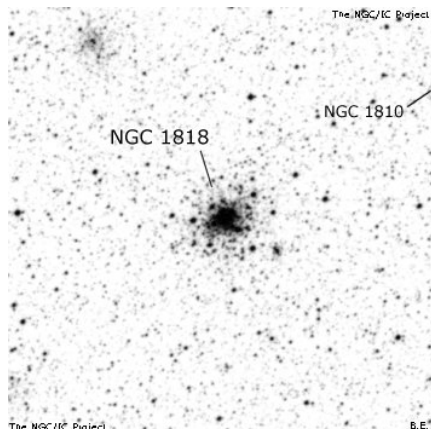
233



Other Names: NGC 1805  
 Type: OC                    Const: Dor  
 V mag: 10.6                   Size: 2.2  
 RA: 5.039                    Dec: -66.10

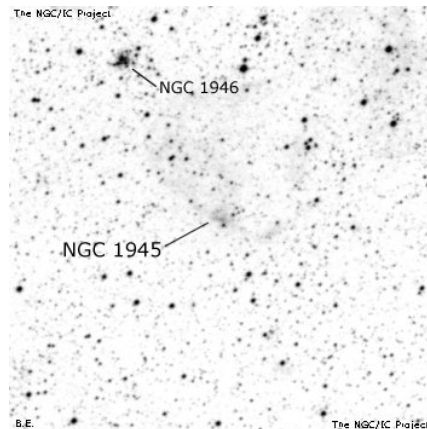


236



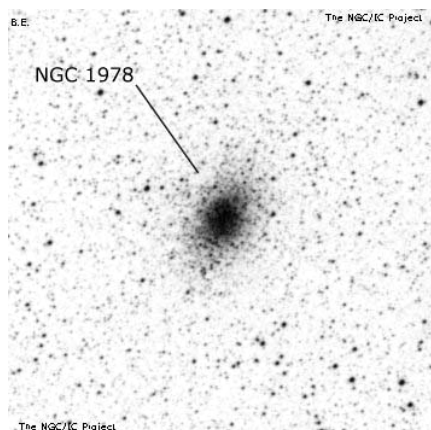
Other Names: NGC 1818  
 Type: OC                      Const: Dor  
 V mag: 9.7                      Size: 2.5  
 RA: 5.071                      Dec: -66.43

237  
poss



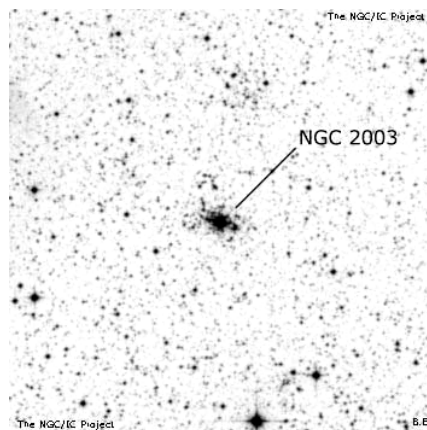
Other Names: NGC 1945  
 Type: Neb                      Const: Dor  
 V mag:                          Size: 10  
 RA: 5.415                      Dec: -66.45

238



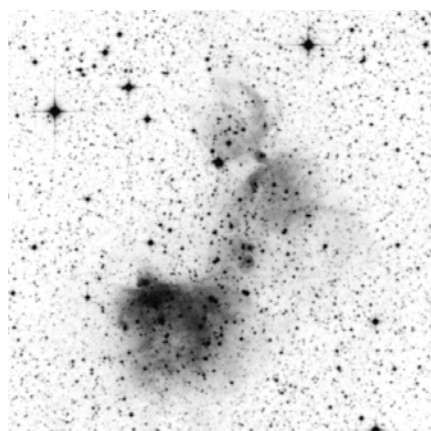
Other Names: NGC 1978  
 Type: OC                      Const: Dor  
 V mag: 10.7                      Size: 4.2  
 RA: 5.479                      Dec: -66.23

239  
poss



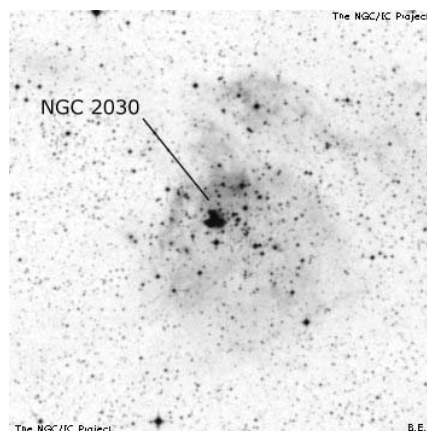
Other Names: NGC 2003  
 Type: OC                      Const: Dor  
 V mag: 11.3                      Size: 2.2  
 RA: 5.515                      Dec: -66.47

239



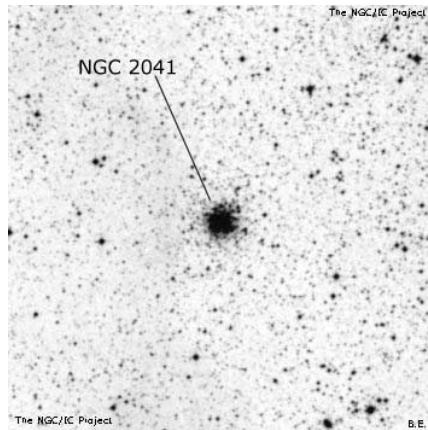
Other Names: Shapley-Lindsay 553  
 Type: Neb                      Const: Dor  
 V mag:                          Size: 3.5  
 RA: 5.535                      Dec: -66.42

240



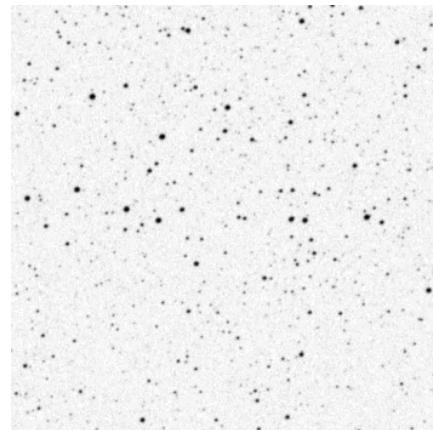
Other Names: NGC 2030  
 Type: Neb                      Const: Dor  
 V mag:                          Size: 1.7  
 RA: 5.594                      Dec: -66.03

241



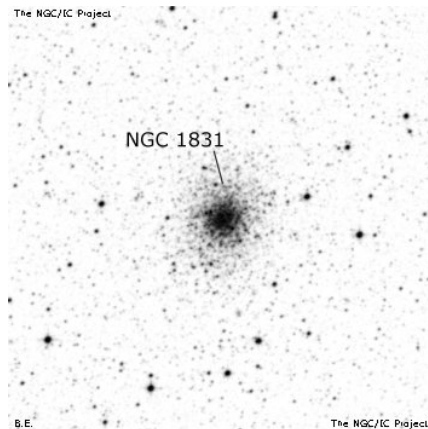
Other Names: NGC 2041  
 Type: OC                      Const: Dor  
 V mag: 10.4                  Size: 0.7  
 RA: 5.608                    Dec: -66.98

244



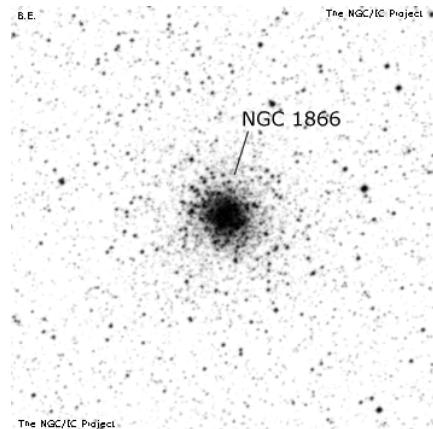
Other Names: Harvord 8  
 Type: OC                      Const: Mus  
 V mag: 9.5                    Size: 4  
 RA: 13.300                  Dec: -67.12

246



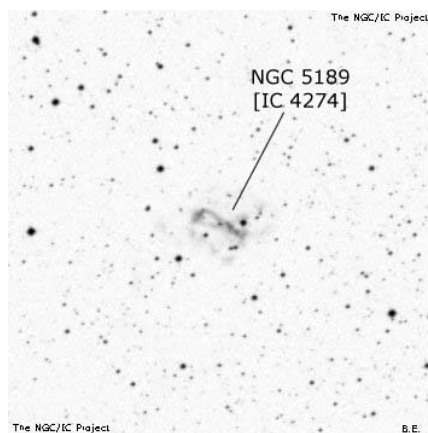
Other Names: NGC 1831  
 Type: OC                      Const: Dor  
 V mag: 11.2                  Size: 4  
 RA: 5.108                    Dec: -64.92

248



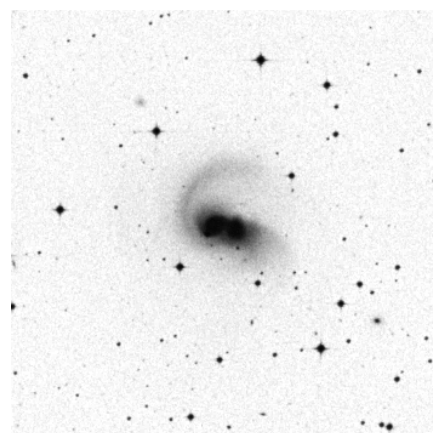
Other Names: NGC 1866  
 Type: OC                      Const: Dor  
 V mag: 9.7                    Size: 5.1  
 RA: 5.228                    Dec: -65.45

252



Other Names: NGC 5189  
 Type: PN                      Const: Mus  
 V mag: 9.5                    Size: 140''  
 RA: 13.559                  Dec: -65.97

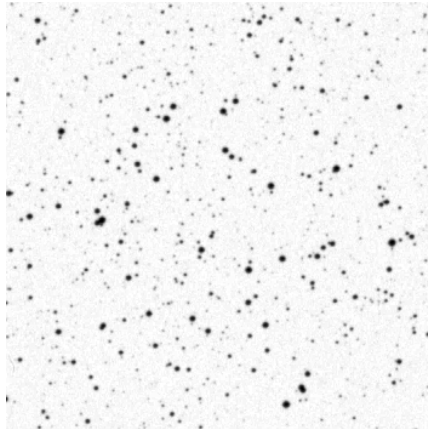
255



Other Names: IC 5250  
 Type: Gxy                      Const: Tuc  
 V mag: 11.1                  Size: 3.1  
 RA: 22.788                  Dec: -65.05

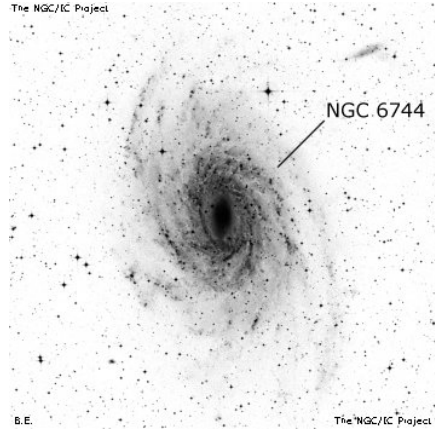


258



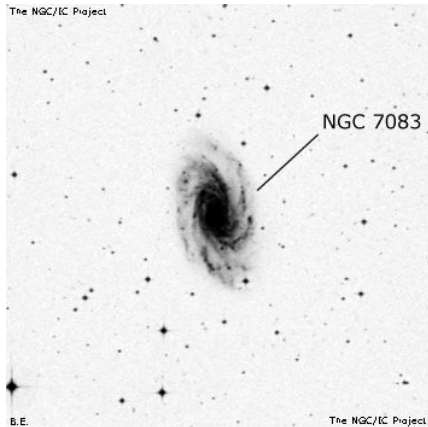
Other Names: Melotte 101  
Type: OC                      Const: Car  
V mag: 8.2                      Size: 15  
RA: 10.703                      Dec: -65.10

262



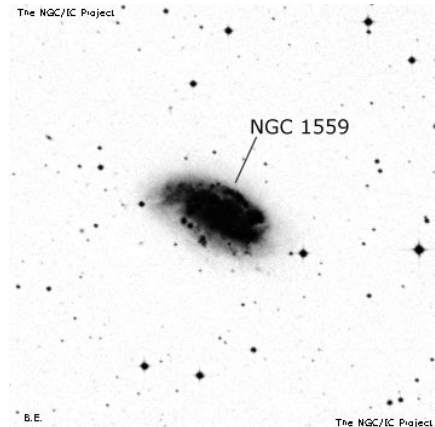
Other Names: NGC 6744  
Type: Gxy                      Const: Pav  
V mag: 8.8                      Size: 20  
RA: 19.163                      Dec: -63.85

263



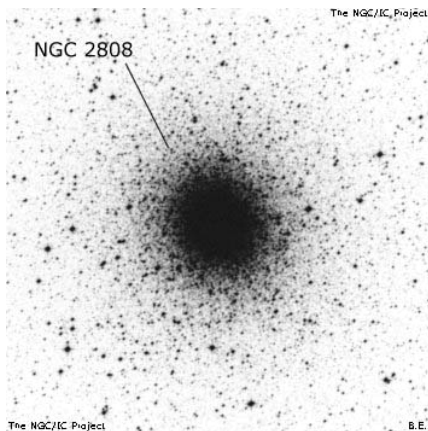
Other Names: NGC 7083  
Type: Gxy                      Const: Ind  
V mag: 11.4                      Size: 3.9  
RA: 21.596                      Dec: -63.90

264



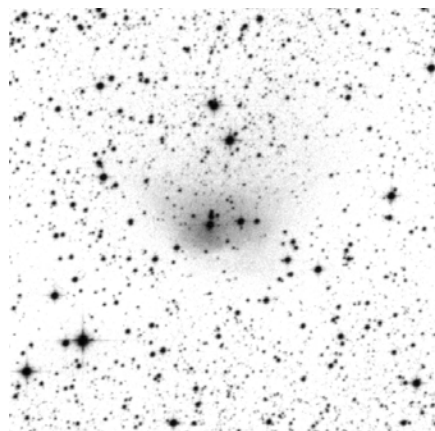
Other Names: NGC 1559  
Type: Gxy                      Const: Ret  
V mag: 10.7                      Size: 3.5  
RA: 4.294                      Dec: -62.78

265



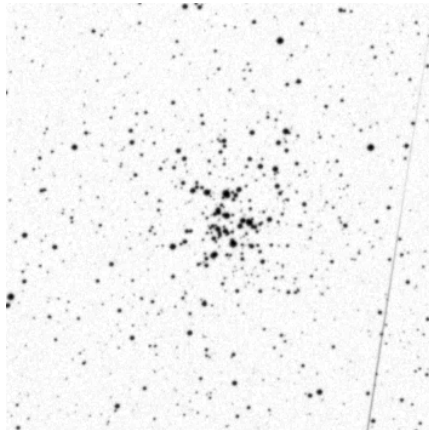
Other Names: NGC 2808  
Type: GC                      Const: Car  
V mag: 6.2                      Size: 13.8  
RA: 9.201                      Dec: -64.85

266  
poss



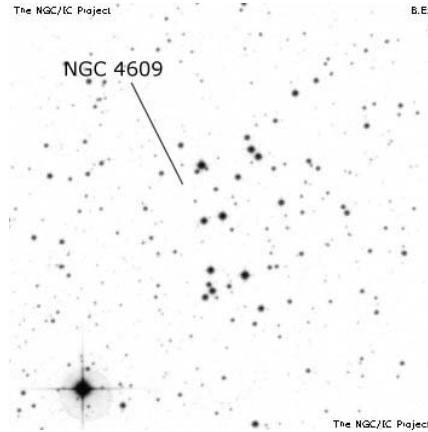
Other Names: IC 2966  
Type: Neb                      Const: Mus  
V mag:                      Size: 3  
RA: 11.837                      Dec: -64.87

271



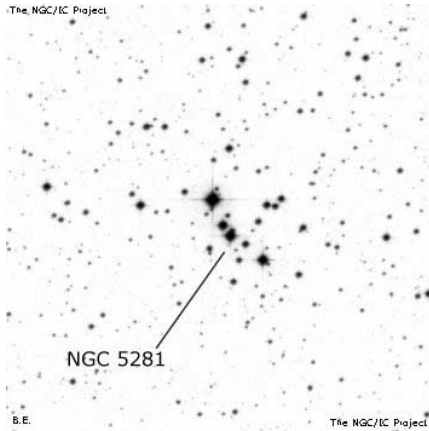
Other Names: Melotte 105  
 Type: OC                    Const: Car  
 V mag: 8.95                Size: 5  
 RA: 11.328                Dec: -63.48

272



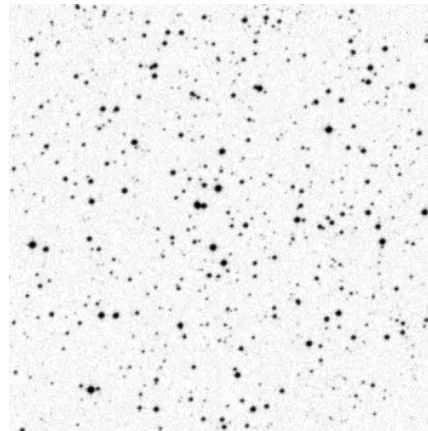
Other Names: NGC 4609  
 Type: OC                    Const: Cru  
 V mag: 6.9                 Size: 5  
 RA: 12.705                Dec: -62.98

273



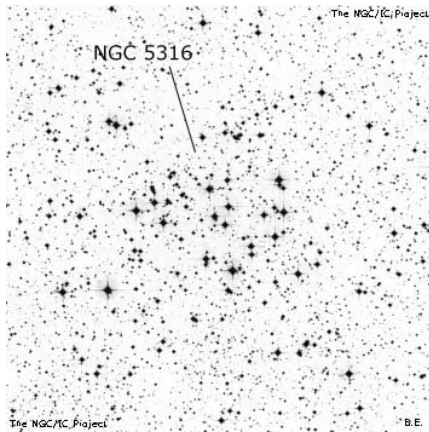
Other Names: Lac I.7, NGC 5281  
 Type: OC                    Const: Cen  
 V mag: 5.9                 Size: 8  
 RA: 13.777                Dec: -62.90

281



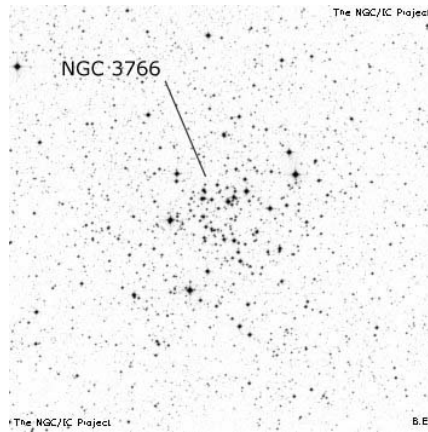
Other Names: IC 2714  
 Type: OC                    Const: Car  
 V mag: 8.2                 Size: 15  
 RA: 11.289                Dec: -62.72

282



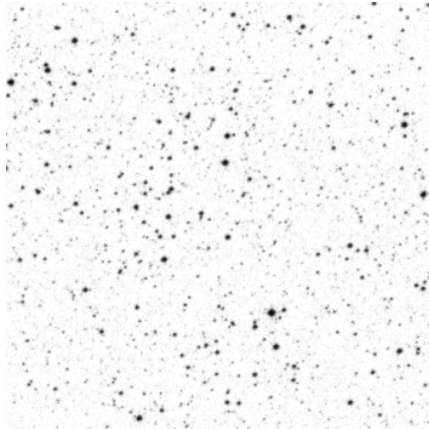
Other Names: NGC 5316  
 Type: OC                    Const: Cen  
 V mag: 6                    Size: 13  
 RA: 13.899                Dec: -61.87

289



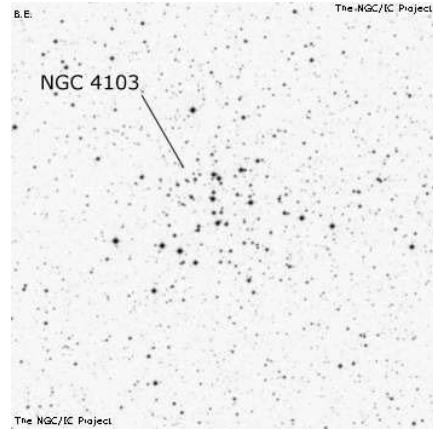
Other Names: Lac III.7, NGC 3766  
 Type: OC                    Const: Cen  
 V mag: 5.3                 Size: 12  
 RA: 11.602                Dec: -61.62

290



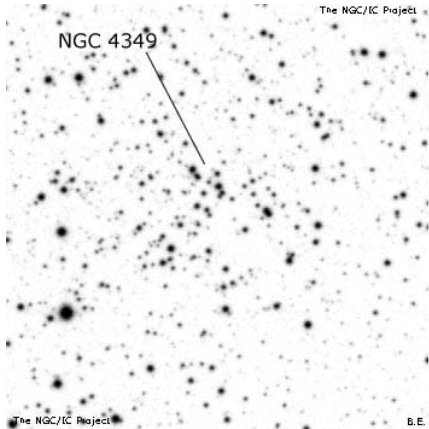
Other Names: Ruprecht 95  
Type: OC Const: Cen  
V mag: Size: 5  
RA: 9.727 Dec: -61.13

291



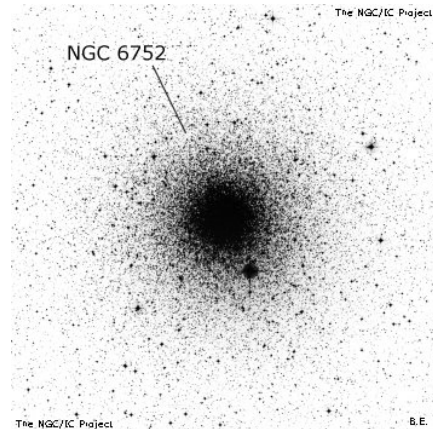
Other Names: NGC 4103  
Type: OC Const: Cru  
V mag: 7.4 Size: 6  
RA: 12.111 Dec: -61.25

292



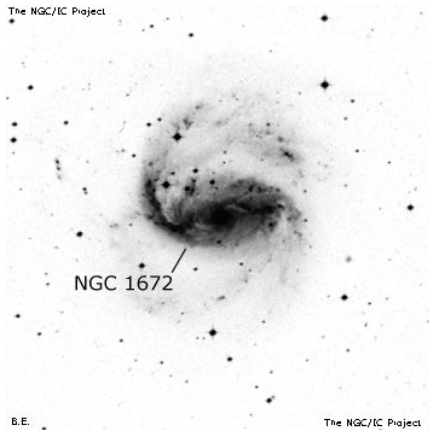
Other Names: NGC 4349  
Type: OC Const: Cru  
V mag: 7.4 Size: 15  
RA: 12.403 Dec: -61.87

295



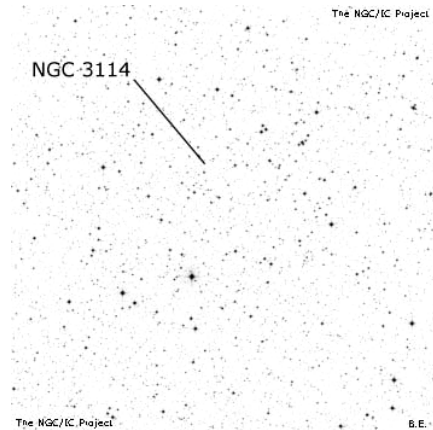
Other Names: NGC 6752  
Type: GC Const: Pav  
V mag: 5.3 Size: 20.4  
RA: 19.181 Dec: -59.98

296



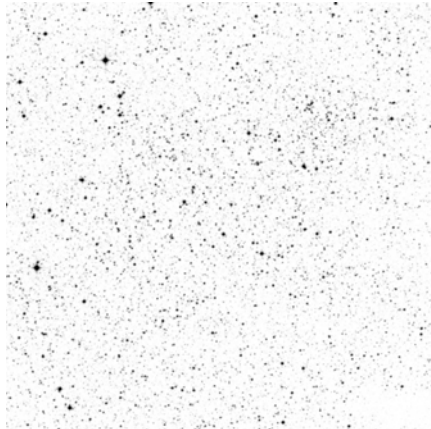
Other Names: NGC 1672  
Type: Gxy Const: Dor  
V mag: 10.2 Size: 6.6  
RA: 4.762 Dec: -59.23

297



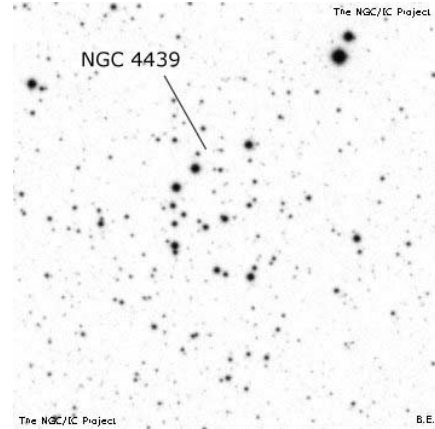
Other Names: NGC 3114  
Type: OC Const: Car  
V mag: 4.2 Size: 35  
RA: 10.042 Dec: -60.12

**299**  
poss



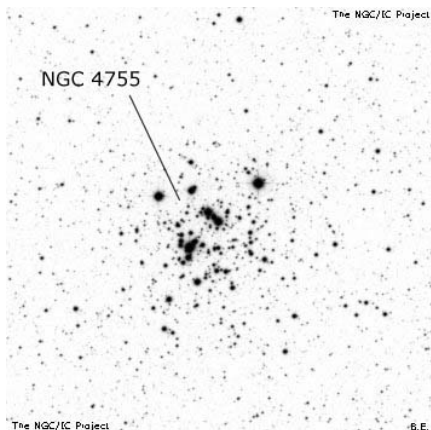
Other Names: Ruprecht 164  
Type: OC                      Const: Cen  
V mag:                        Size: 2  
RA: 11.514                    Dec: -60.73

**300**



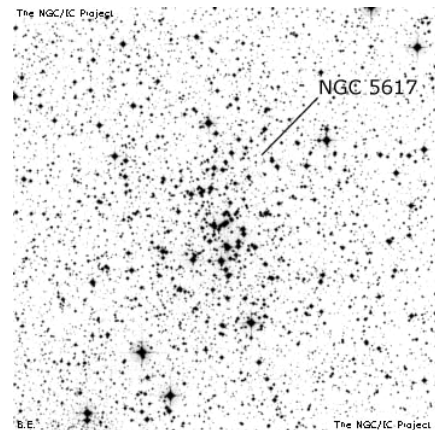
Other Names: NGC 4439  
Type: OC                      Const: Cru  
V mag: 8.4                    Size: 4  
RA: 12.475                    Dec: -60.10

**301**



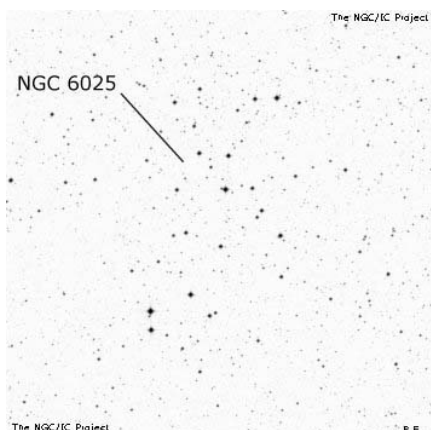
Other Names: Lac II.12, NGC 4755  
Type: OC                      Const: Cru  
V mag: 4.2                    Size: 10  
RA: 12.893                    Dec: -60.33

**302**



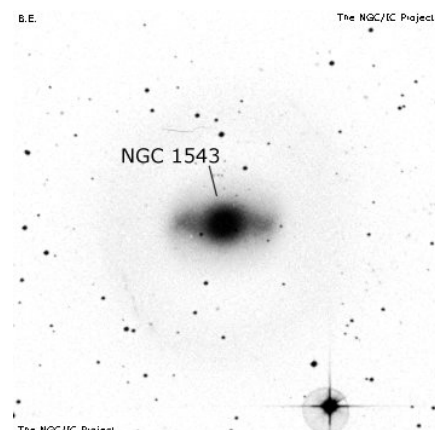
Other Names: NGC 5617  
Type: OC                      Const: Cen  
V mag: 6.3                    Size: 10  
RA: 14.496                    Dec: -60.70

**304**



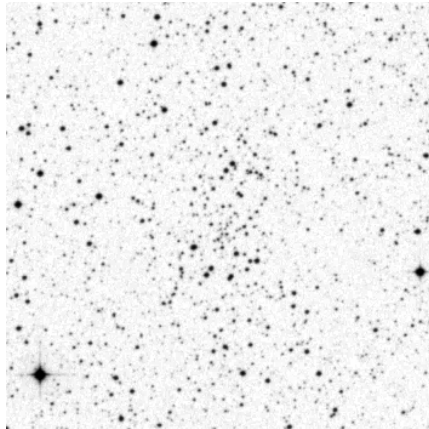
Other Names: Lac III.10, NGC 6025  
Type: OC                      Const: TrA  
V mag: 5.1                    Size: 12  
RA: 16.062                    Dec: -60.50

**306**



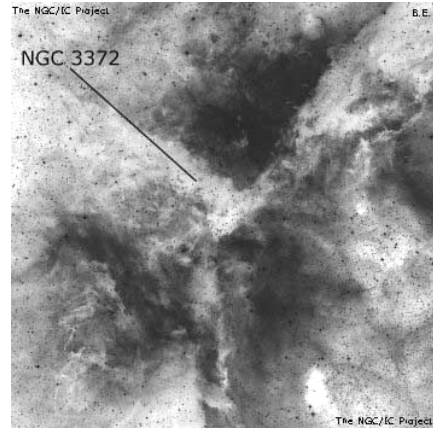
Other Names: NGC 1543  
Type: Gxy                      Const: Ret  
V mag: 10.3                    Size: 4.9  
RA: 4.212                    Dec: -57.73

308



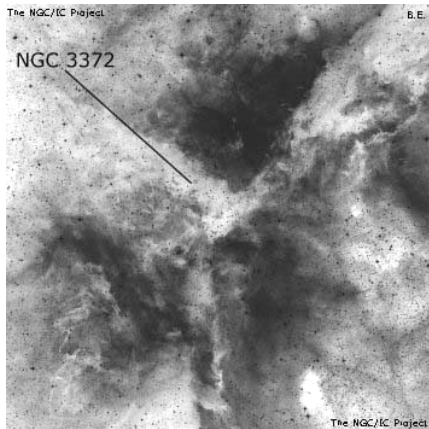
Other Names: Trümpler 13  
Type: OC  
V mag: 11.3  
RA: 10.397  
Const: Car  
Size: 5  
Dec: -60.13

309



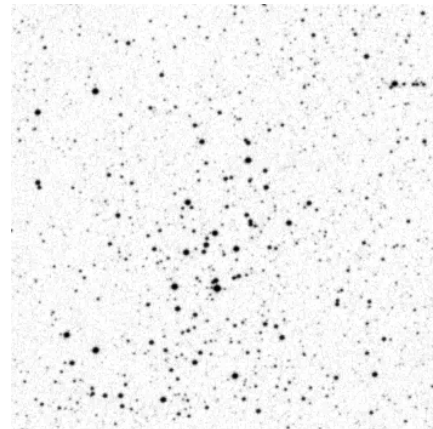
Other Names: Lac III.5, NGC 3372  
Type: Neb  
V mag: 3.5  
RA: 10.730  
Const: Car  
Size: 120  
Dec: -56.98

309



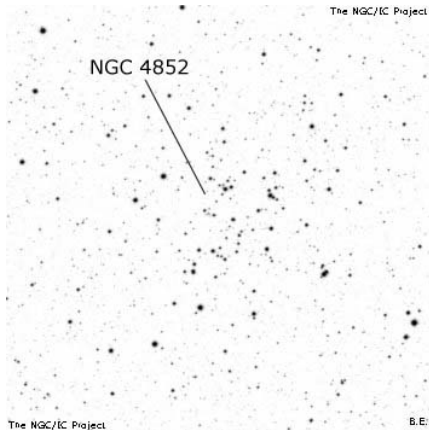
Other Names: Lac III.6, NGC 3372  
Type: Neb  
V mag: 3.5  
RA: 10.730  
Const: Car  
Size: 120  
Dec: -56.98

310



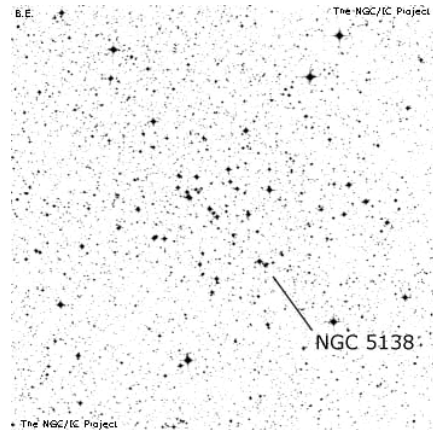
Other Names: Trümpler 17  
Type: OC  
V mag: 8.9  
RA: 10.940  
Const: Car  
Size: 5  
Dec: -59.20

311



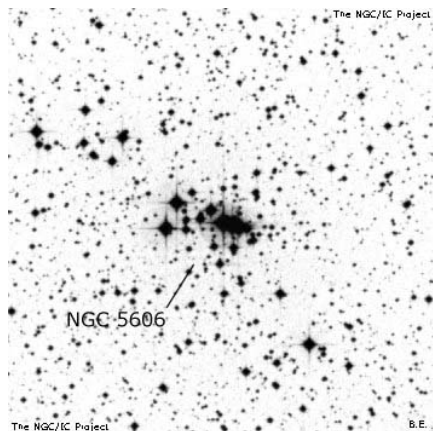
Other Names: NGC 4852  
Type: OC  
V mag: 8.9  
RA: 13.004  
Const: Cen  
Size: 11  
Dec: -59.62

312



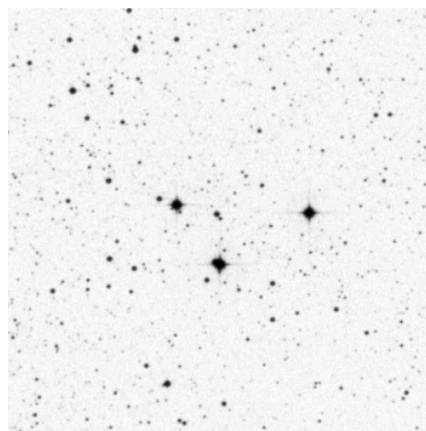
Other Names: NGC 5138  
Type: OC  
V mag: 7.6  
RA: 13.455  
Const: Cen  
Size: 7  
Dec: -59.02

313



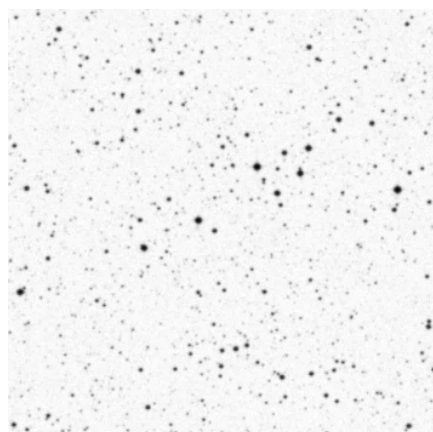
Other Names: NGC 5606  
 Type: OC                      Const: Cen  
 V mag: 7.7                      Size: 3  
 RA: 14.463                      Dec: -59.62

314



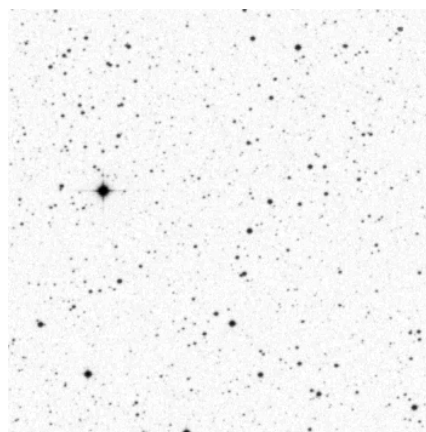
Other Names: Lac III.9  
 Type: Ast                      Const: Cir  
 V mag: 8.1                      Size: 2.3  
 RA: 15.377                      Dec: -59.20

315



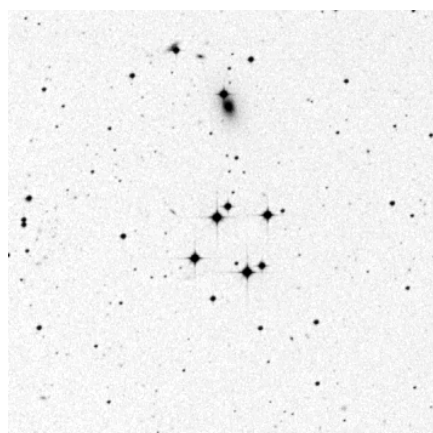
Other Names: 5 stars  
 Type: Ast                      Const: Nor  
 V mag:                              Size: 1.6  
 RA: 15.550                      Dec: -58.67

316



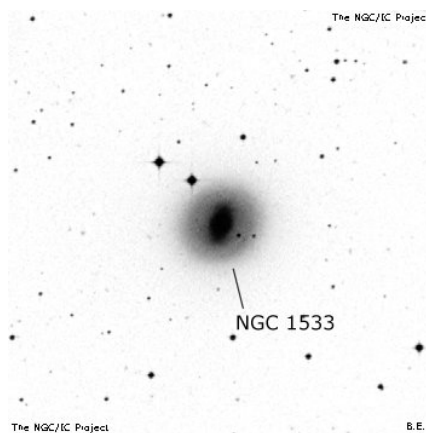
Other Names: arc of stars  
 Type: Ast                      Const: Ara  
 V mag:                              Size: 4  
 RA: 16.733                      Dec: -58.60

319



Other Names: cross shaped asterism  
 Type: Ast                      Const: Tuc  
 V mag:                              Size: 2  
 RA: 22.321                      Dec: -57.13

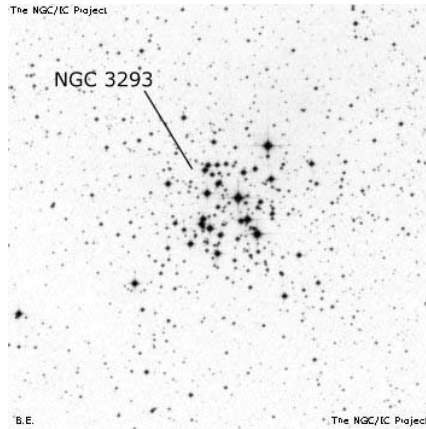
320



Other Names: NGC 1533  
 Type: Gxy                      Const: Dor  
 V mag: 10.9                      Size: 2.8  
 RA: 4.164                      Dec: -56.12

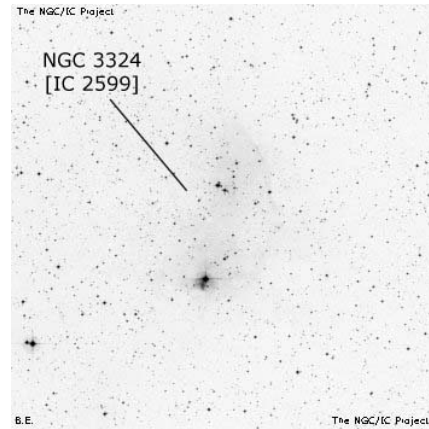


321



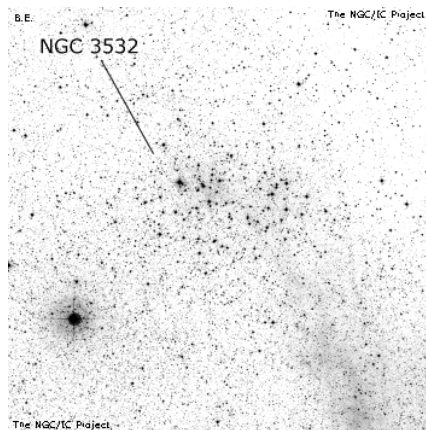
Other Names: Lac II.8, NGC 3293  
 Type: OC                      Const: Car  
 V mag: 4.7                    Size: 6  
 RA: 10.597                  Dec: -58.23

322



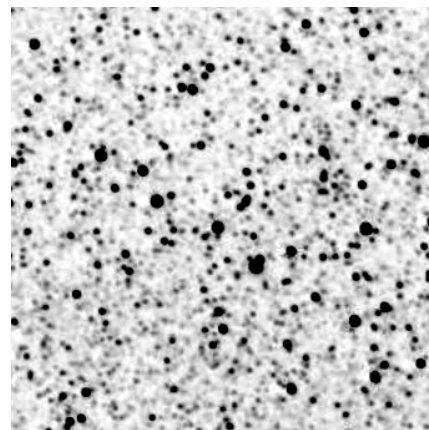
Other Names: NGC 3324  
 Type: Neb                    Const: Car  
 V mag:                        Size: 5  
 RA: 10.623                  Dec: -58.62

323



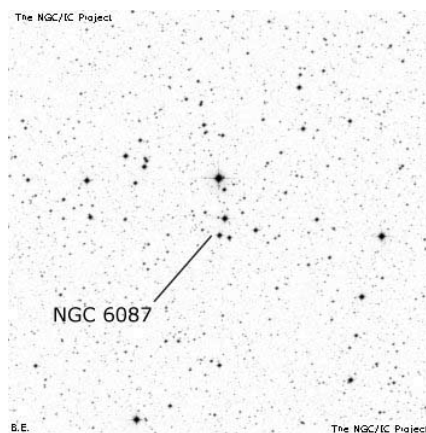
Other Names: Lac II.10, NGC 3532  
 Type: OC                      Const: Car  
 V mag: 3                      Size: 55  
 RA: 11.107                  Dec: -64.40

324



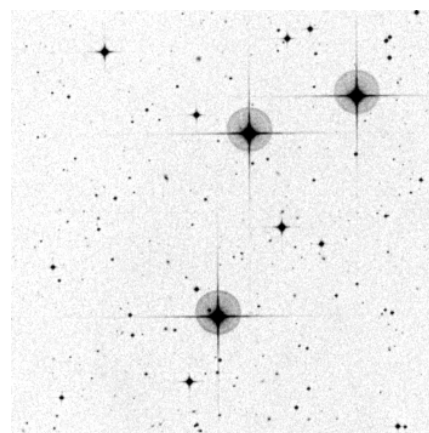
Other Names: Lac II.11  
 Type: OC                      Const: Car  
 V mag: 3                      Size: 55  
 RA: 11.383                  Dec: -58.32

326



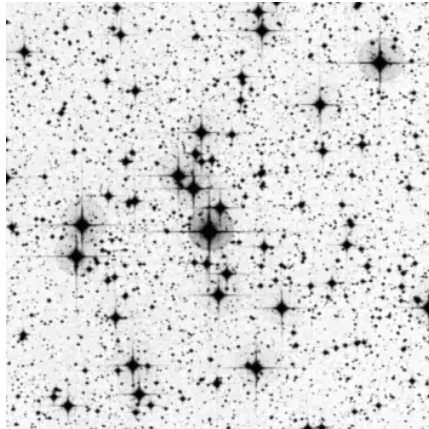
Other Names: NGC 6087  
 Type: OC                      Const: Nor  
 V mag: 5.4                    Size: 12  
 RA: 16.314                  Dec: -57.93

329



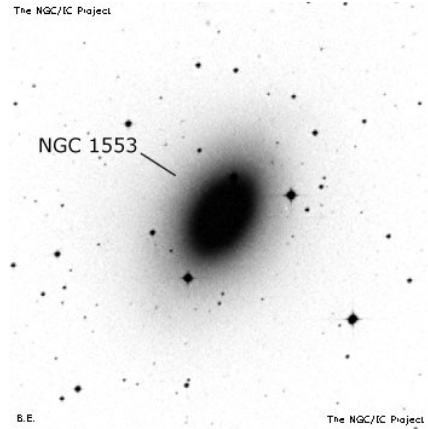
Other Names: Lac III.14  
 Type: Ast                    Const: Ind  
 V mag: 8.4                    Size: 4.4  
 RA: 21.518                  Dec: -56.92

330



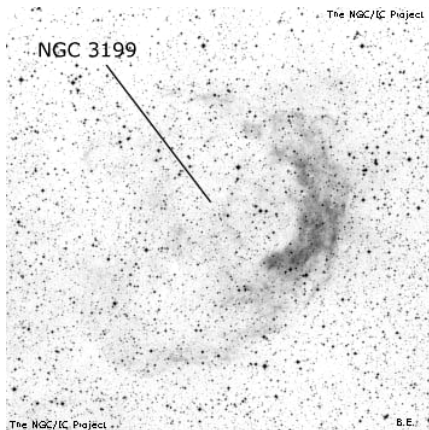
Other Names: Lac III.4, IC 2488  
 Type: OC                      Const: Vel  
 V mag: 7.4                      Size: 18  
 RA: 9.460                      Dec: -56.98

331



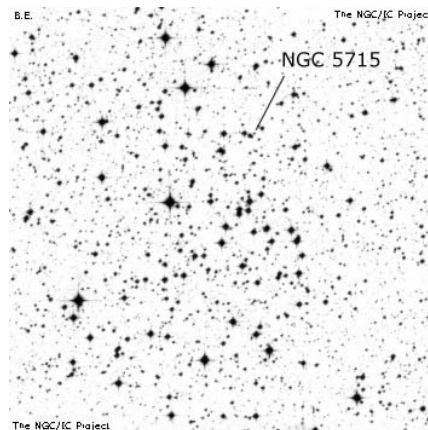
Other Names: NGC 1553  
 Type: Gxy                      Const: Dor  
 V mag: 9.4                      Size: 4.5  
 RA: 4.270                      Dec: -55.78

332



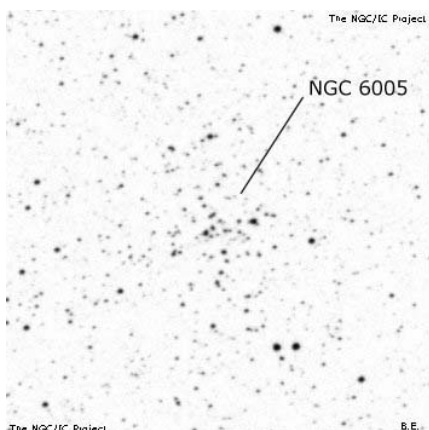
Other Names: NGC 3199  
 Type: Neb                      Const: Car  
 V mag:                          Size: 22  
 RA: 10.290                      Dec: -57.92

333



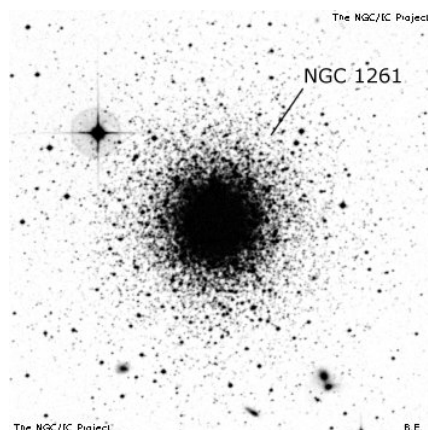
Other Names: NGC 5715  
 Type: OC                      Const: Cir  
 V mag: 9.8                      Size: 5  
 RA: 14.725                      Dec: -57.57

334



Other Names: NGC 6005  
 Type: OC                      Const: Nor  
 V mag: 10.7                      Size: 3  
 RA: 15.930                      Dec: -57.43

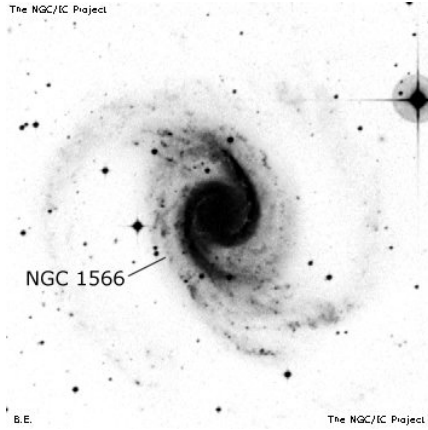
337



Other Names: NGC 1261  
 Type: GC                      Const: Hor  
 V mag: 8.3                      Size: 6.9  
 RA: 3.204                      Dec: -55.20

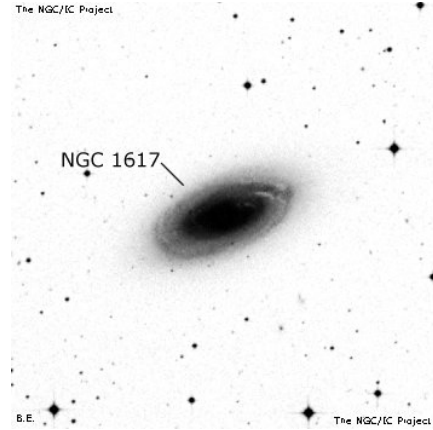


338



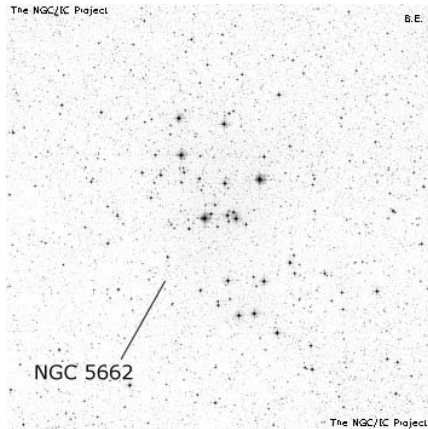
Other Names: NGC 1566  
 Type: Gxy                      Const: Dor  
 V mag: 9.8                      Size: 7  
 RA: 4.333                      Dec: -54.93

339



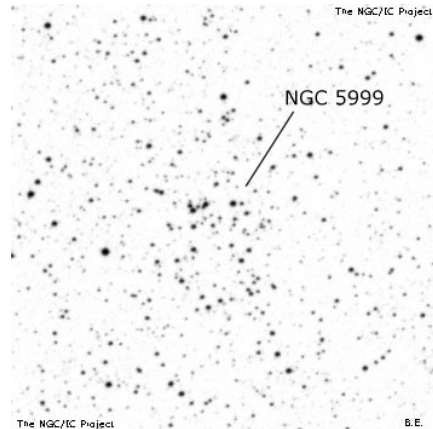
Other Names: NGC 1617  
 Type: Gxy                      Const: Dor  
 V mag: 10.7                      Size: 4.3  
 RA: 4.528                      Dec: -54.60

342



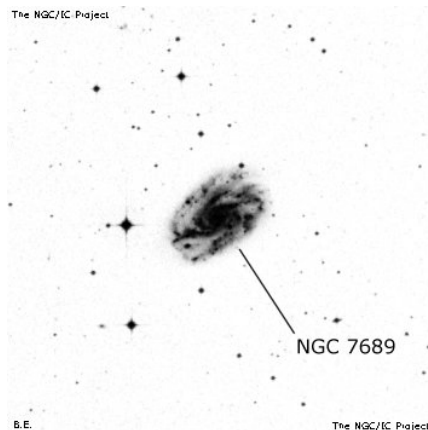
Other Names: Lac III.8, NGC 5662  
 Type: OC                      Const: Cen  
 V mag: 5.5                      Size: 30  
 RA: 14.587                      Dec: -56.55

343



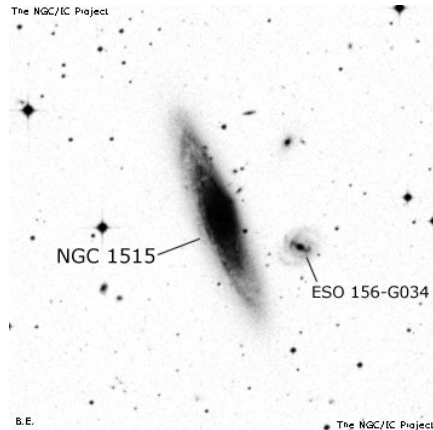
Other Names: NGC 5999  
 Type: OC                      Const: Nor  
 V mag: 9                      Size: 3  
 RA: 15.869                      Dec: -56.47

347



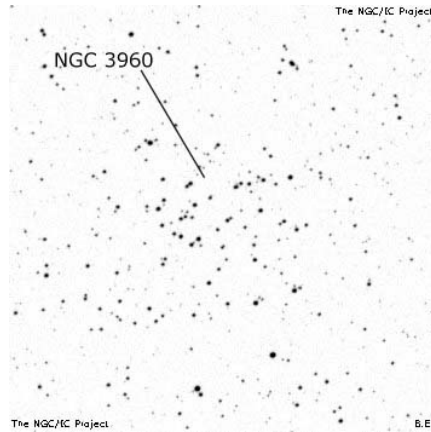
Other Names: NGC 7689  
 Type: Gxy                      Const: Phe  
 V mag: 11.7                      Size: 2.9  
 RA: 23.554                      Dec: -54.08

348



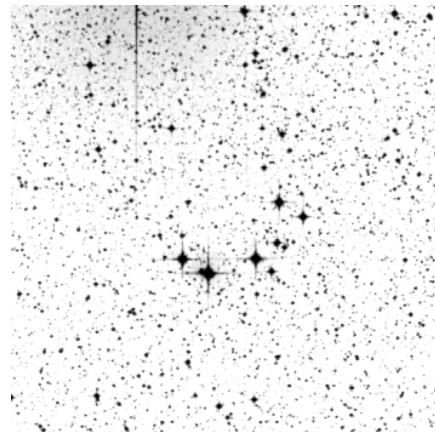
Other Names: NGC 1515  
 Type: Gxy                      Const: Dor  
 V mag: 11.4                      Size: 5.2  
 RA: 4.068                      Dec: -54.10

349



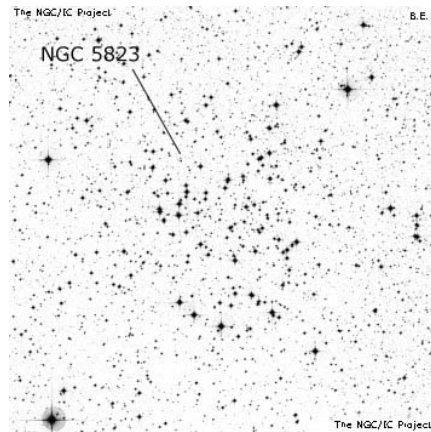
Other Names: NGC 3960  
 Type: OC                      Const: Cen  
 V mag: 8.3                      Size: 6  
 RA: 11.843                      Dec: -55.67

350



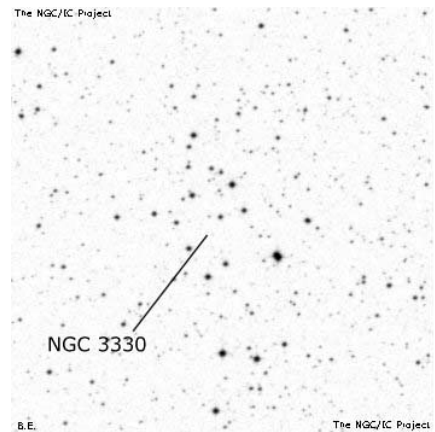
Other Names: curve of stars  
 Type: Ast                      Const: Lup  
 V mag:                              Size: 2.7  
 RA: 14.550                      Dec: -55.10

351



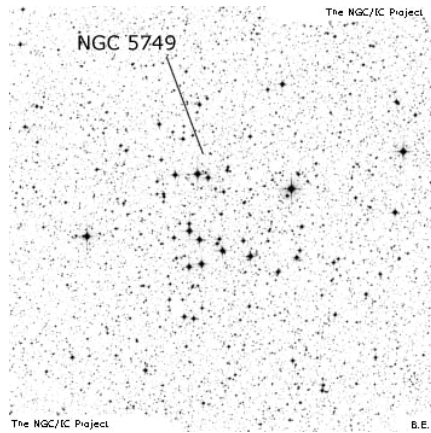
Other Names: NGC 5823  
 Type: OC                      Const: Cir  
 V mag: 7.9                      Size: 12  
 RA: 15.092                      Dec: -55.60

355



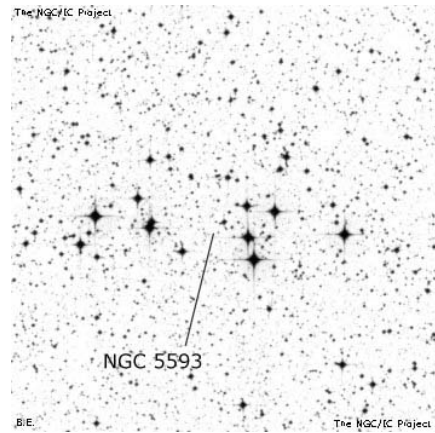
Other Names: NGC 3330  
 Type: OC                      Const: Vel  
 V mag: 7.4                      Size: 6  
 RA: 10.646                      Dec: -54.12

356



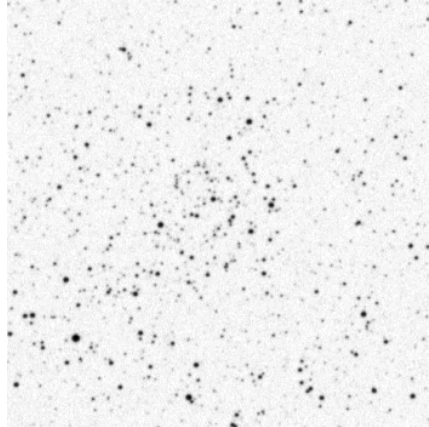
Other Names: NGC 5749  
 Type: OC                      Const: Lup  
 V mag: 8.8                      Size: 7  
 RA: 14.815                      Dec: -54.48

357



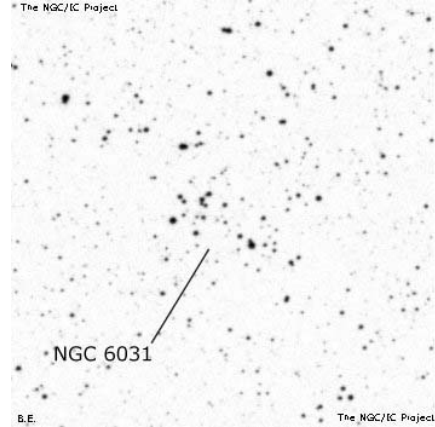
Other Names: NGC 5593  
 Type: OC                      Const: Lup  
 V mag:                              Size: 7  
 RA: 14.428                      Dec: -54.78

**358**



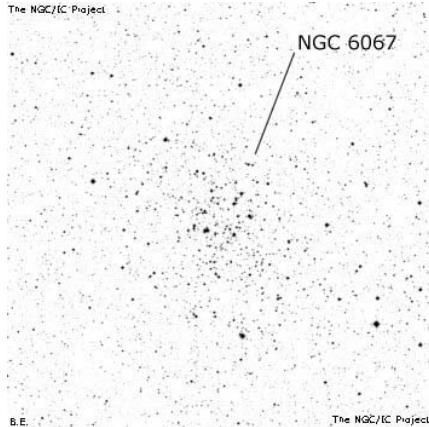
Other Names: Trümpler 23  
Type: OC                      Const: Nor  
V mag: 11.2                      Size: 9  
RA: 16.013                      Dec: -53.53

**359**



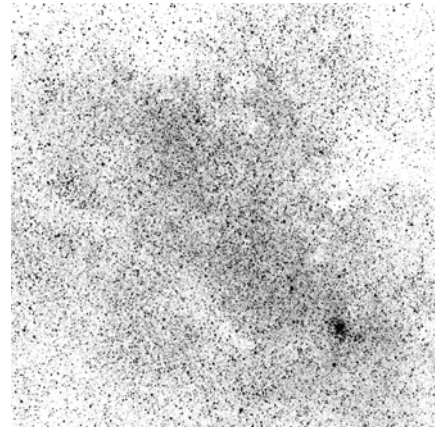
Other Names: NGC 6031  
Type: OC                      Const: Nor  
V mag: 8.5                      Size: 2  
RA: 16.126                      Dec: -54.00

**360**



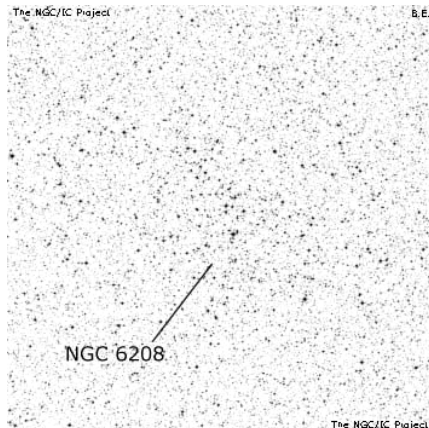
Other Names: NGC 6067  
Type: OC                      Const: Nor  
V mag: 5.6                      Size: 12  
RA: 16.220                      Dec: -54.22

**362**



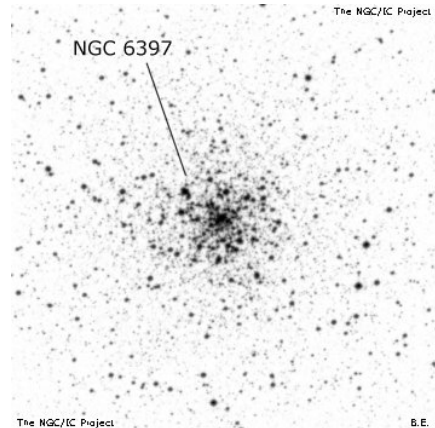
Other Names: Norma star cloud  
Type: MWSC                      Const: Nor  
V mag:                      Size: 180  
RA: 16.350                      Dec: -53.12

**364**



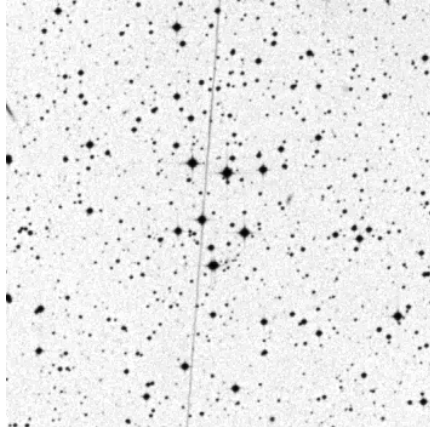
Other Names: NGC 6208  
Type: OC                      Const: Ara  
V mag: 7.2                      Size: 15  
RA: 16.824                      Dec: -53.72

**366**



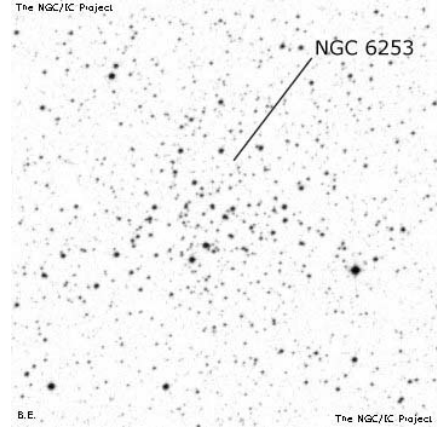
Other Names: Lac III.11, NGC 6397  
Type: GC                      Const: Ara  
V mag: 5.3                      Size: 25.7  
RA: 17.678                      Dec: -53.67

**367**



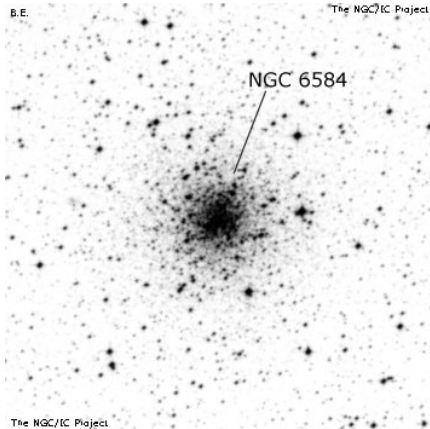
Other Names: bunch of stars  
Type: Ast                      Const: Tel  
V mag:                          Size: 2.2  
RA: 18.994                      Dec: -53.68

**374**



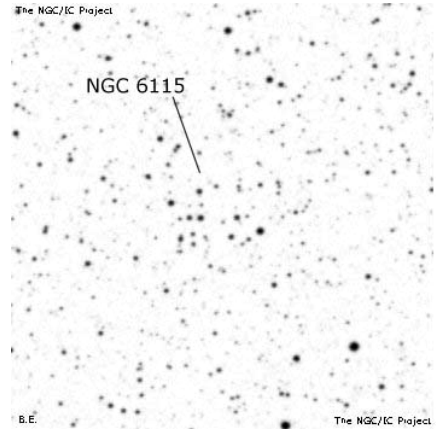
Other Names: NGC 6253  
Type: OC                      Const: Ara  
V mag: 10.2                      Size: 5  
RA: 16.985                      Dec: -52.70

**376**



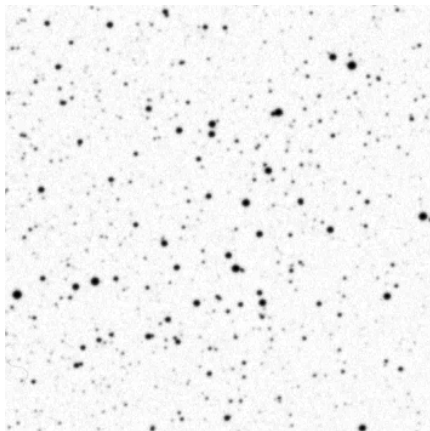
Other Names: NGC 6584  
Type: GC                      Const: Tel  
V mag: 7.9                      Size: 7.9  
RA: 18.311                      Dec: -52.22

**379**



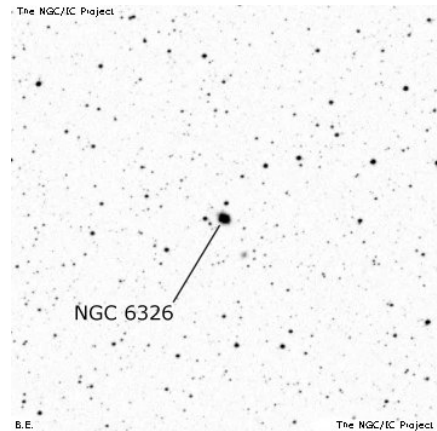
Other Names: NGC 6115  
Type: OC                      Const: Nor  
V mag: 9.8                      Size: 3.4  
RA: 16.407                      Dec: -51.93

**380**



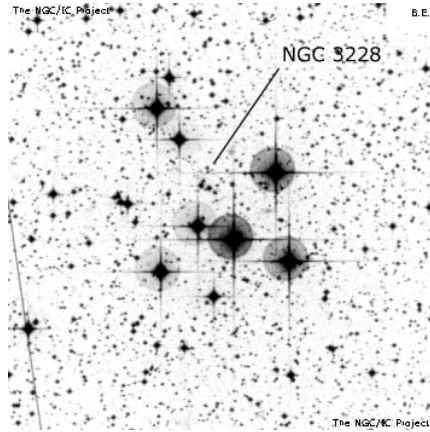
Other Names: Ruprecht 119  
Type: OC                      Const: Nor  
V mag: 8.8                      Size: 8  
RA: 16.471                      Dec: -51.50

**381**  
poss



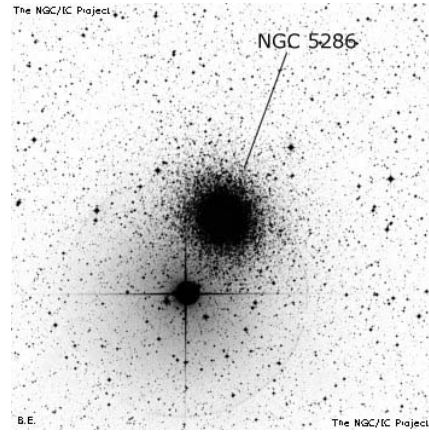
Other Names: NGC 6326  
Type: PN                      Const: Ara  
V mag: 11.1                      Size: 15"  
RA: 17.346                      Dec: -51.75

386



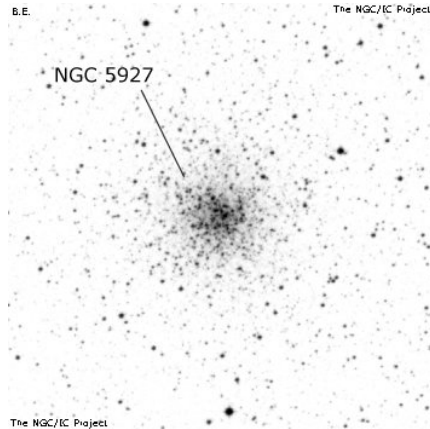
Other Names: Lac II.7, NGC 3228  
 Type: OC                      Const: Vel  
 V mag: 6                      Size: 5  
 RA: 10.363                  Dec: -51.72

388



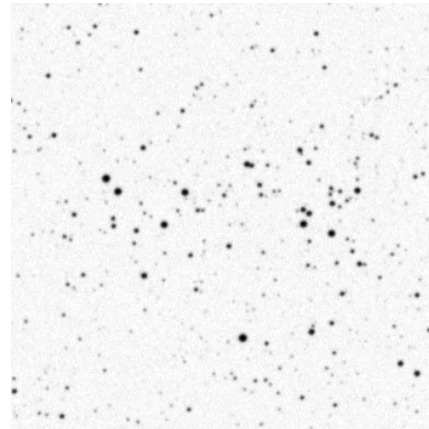
Other Names: NGC 5286  
 Type: GC                      Const: Cen  
 V mag: 7.4                  Size: 9.1  
 RA: 13.774                  Dec: -51.37

389



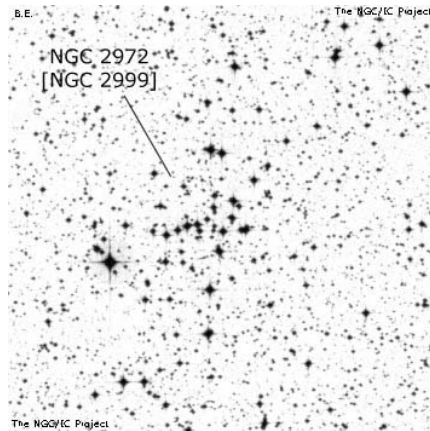
Other Names: NGC 5927  
 Type: GC                      Const: Lup  
 V mag: 8                      Size: 6  
 RA: 15.467                  Dec: -50.67

391



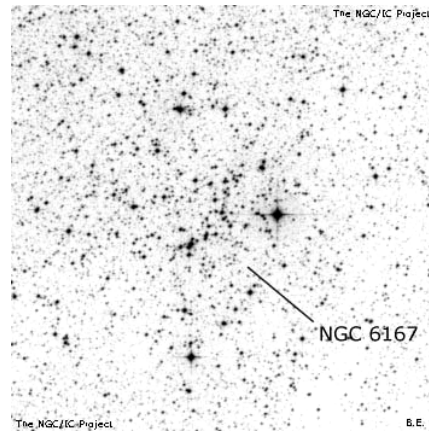
Other Names: Dun392, Collinder307  
 Type: OC                      Const: Ara  
 V mag: 9.7                  Size: 5  
 RA: 16.589                  Dec: -51.00

397



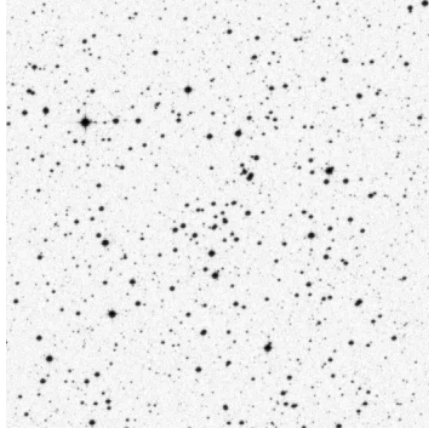
Other Names: NGC 2972  
 Type: OC                      Const: Vel  
 V mag: 9.9                  Size: 4  
 RA: 9.671                    Dec: -50.32

400



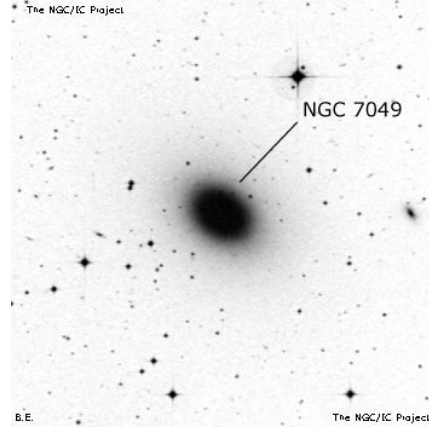
Other Names: NGC 6167  
 Type: OC                      Const: Nor  
 V mag: 6.7                  Size: 7  
 RA: 16.576                  Dec: -49.77

402



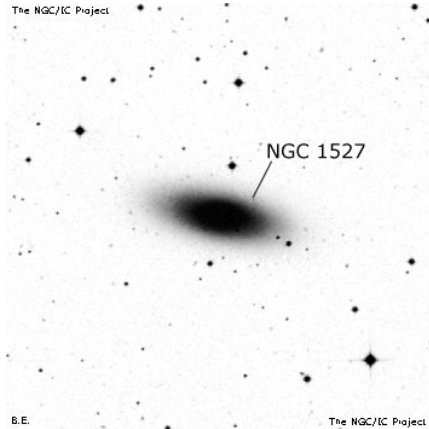
Other Names: IC 4651  
Type: OC                      Const: Ara  
V mag: 6.9                      Size: 10  
RA: 17.414                      Dec: -49.93

406



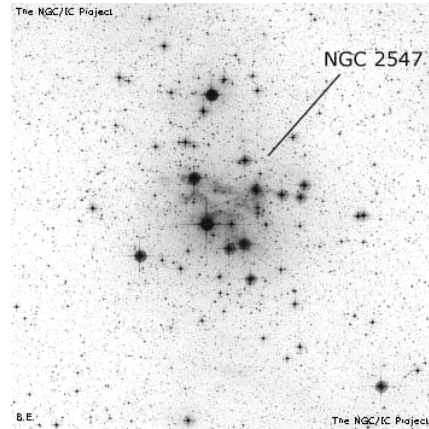
Other Names: NGC 7049  
Type: Gxy                      Const: Ind  
V mag: 10.6                      Size: 4.2  
RA: 21.317                      Dec: -48.55

409



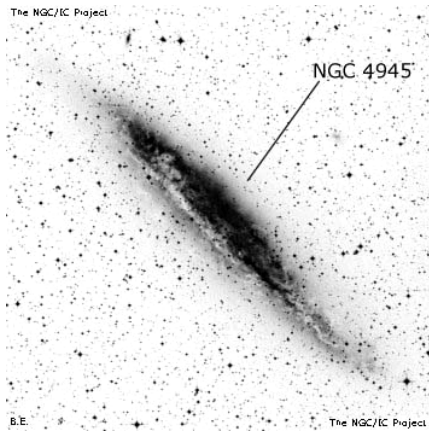
Other Names: NGC 1527  
Type: Gxy                      Const: Hor  
V mag: 11                      Size: 3.7  
RA: 4.140                      Dec: -47.88

410



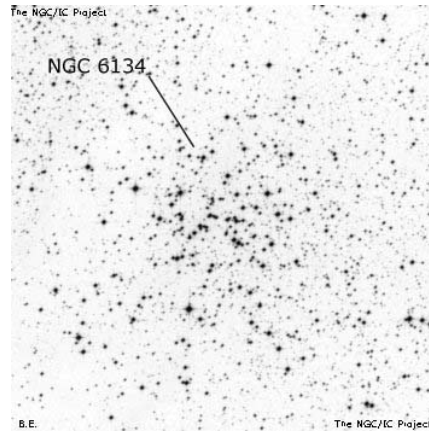
Other Names: Lac III.2, NGC 2547  
Type: OC                      Const: Vel  
V mag: 4.7                      Size: 20  
RA: 8.178                      Dec: -49.27

411



Other Names: NGC 4945  
Type: Gxy                      Const: Cen  
V mag: 8.9                      Size: 20  
RA: 13.091                      Dec: -49.47

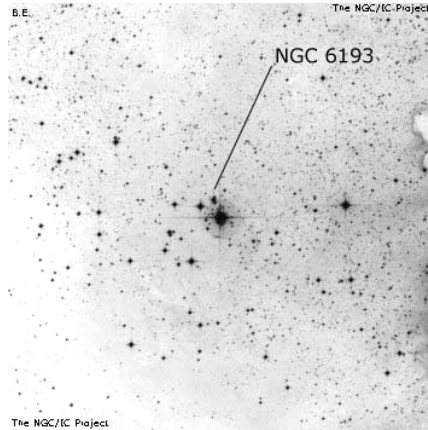
412



Other Names: NGC 6134  
Type: OC                      Const: Nor  
V mag: 7.2                      Size: 6  
RA: 16.463                      Dec: -49.15

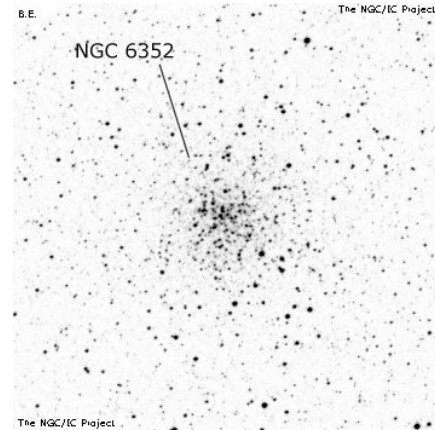


413



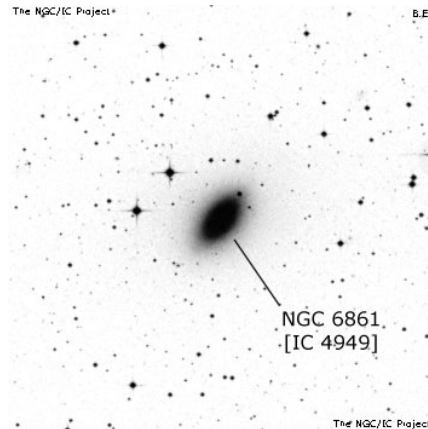
Other Names: NGC 6193  
 Type: OC                      Const: Ara  
 V mag: 5.2                    Size: 14  
 RA: 16.689                  Dec: -48.75

417



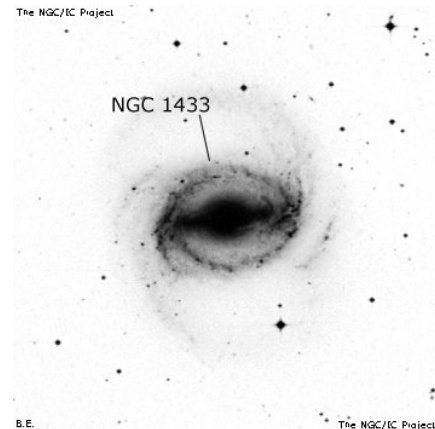
Other Names: NGC 6352  
 Type: GC                      Const: Ara  
 V mag: 7.8                    Size: 7.1  
 RA: 17.425                  Dec: -48.42

425



Other Names: NGC 6861  
 Type: Gxy                      Const: Tel  
 V mag: 11.2                   Size: 2.8  
 RA: 20.122                  Dec: -48.37

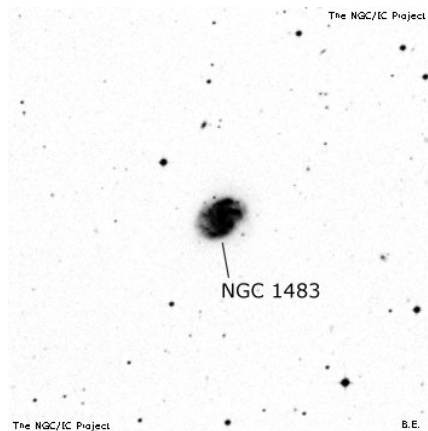
426



Other Names: NGC 1433  
 Type: Gxy                      Const: Hor  
 V mag: 10.1                   Size: 6.5  
 RA: 3.700                    Dec: -47.22

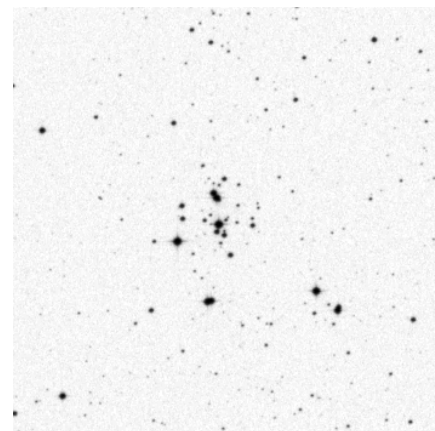
428

poss



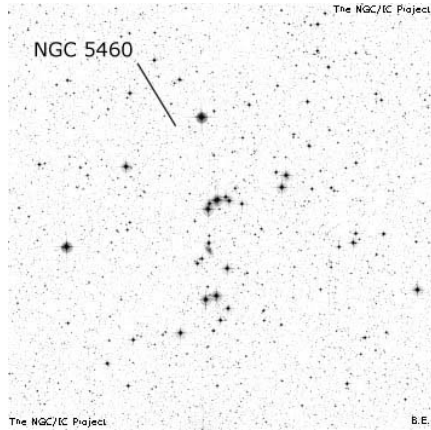
Other Names: NGC 1483  
 Type: Gxy                      Const: Hor  
 V mag: 12.7                   Size: 1.6  
 RA: 3.880                    Dec: -47.47

430



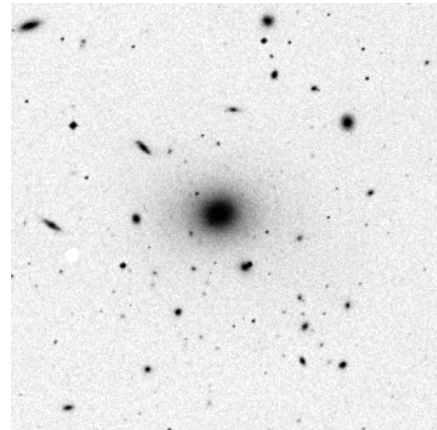
Other Names: Collinder 205  
 Type: OC                      Const: Vel  
 V mag: 7.8                    Size: 2  
 RA: 9.009                    Dec: -48.98

431



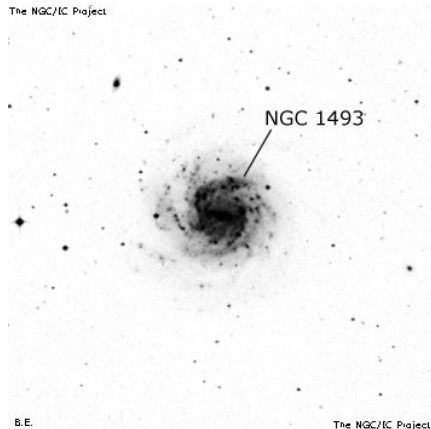
Other Names: NGC 5460  
 Type: OC                      Const: Cen  
 V mag: 5.6                    Size: 35  
 RA: 14.124                  Dec: -48.33

437



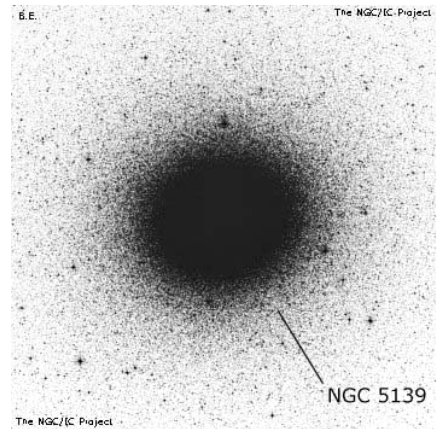
Other Names: IC 1633  
 Type: Gxy                    Const: Phe  
 V mag: 11.4                  Size: 2.6  
 RA: 1.165                    Dec: -45.92

438



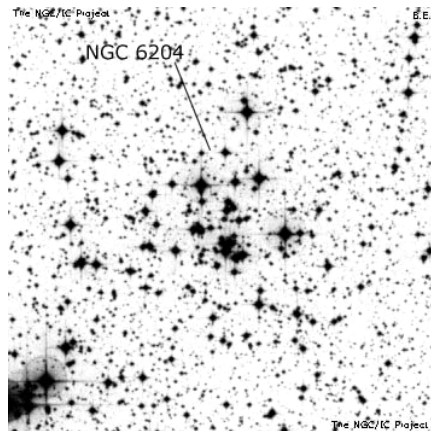
Other Names: NGC 1493  
 Type: Gxy                    Const: Hor  
 V mag: 11.4                  Size: 3.5  
 RA: 3.958                    Dec: -46.20

440



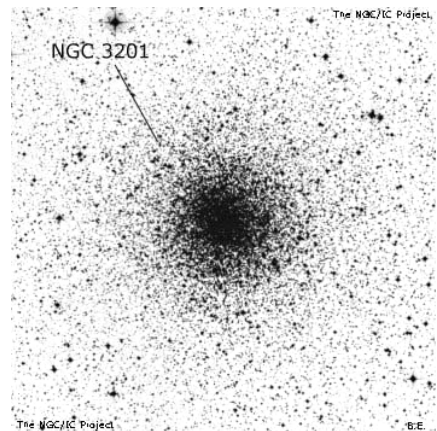
Other Names: Lac I.5, NGC 5139  
 Type: GC                    Const: Cen  
 V mag: 3.68                  Size: 36.3  
 RA: 13.447                  Dec: -47.48

442



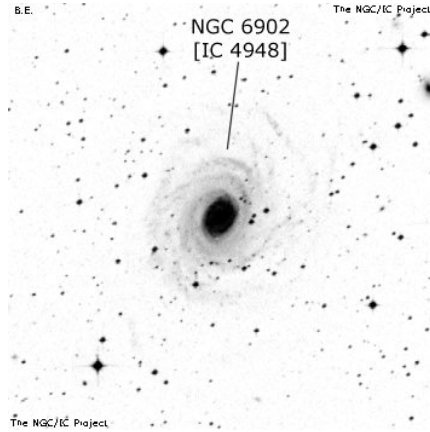
Other Names: NGC 6204  
 Type: OC                    Const: Ara  
 V mag: 8.2                    Size: 5  
 RA: 16.769                  Dec: -47.02

445



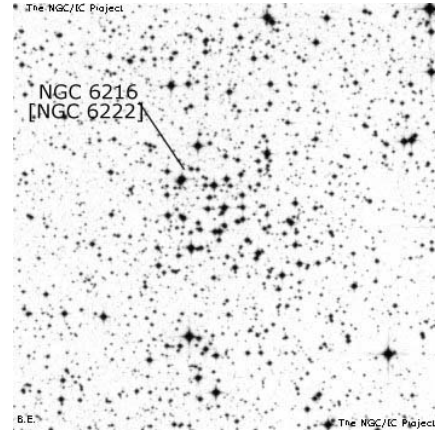
Other Names: NGC 3201  
 Type: GC                    Const: Vel  
 V mag: 6.9                    Size: 18  
 RA: 10.294                  Dec: -46.40

**451**  
poss



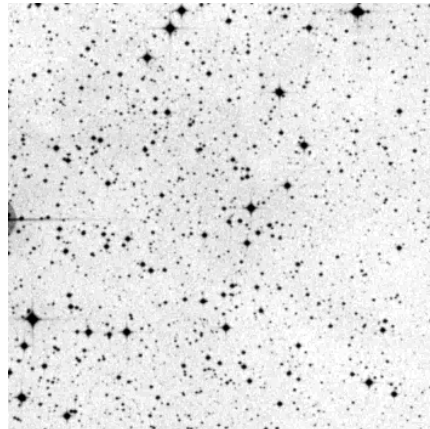
Other Names: NGC 6902  
Type: Gxy            Const: Sgr  
V mag: 11.5        Size: 5.6  
RA: 20.408        Dec: -43.65

**454**



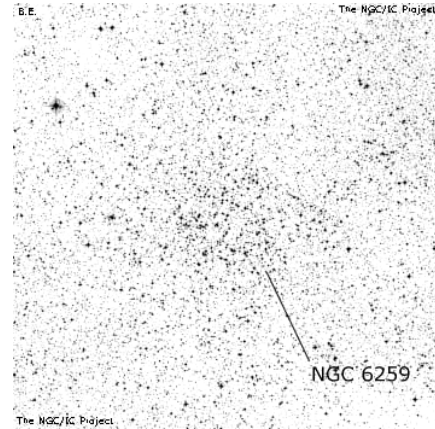
Other Names: NGC 6216  
Type: OC            Const: Sco  
V mag: 10.1        Size: 4  
RA: 16.824        Dec: -44.72

**455**



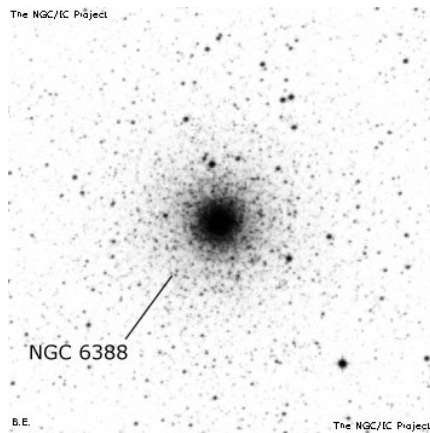
Other Names: Lynga 14  
Type: OC            Const: Sco  
V mag: 9.7        Size: 3  
RA: 16.918        Dec: -45.23

**456**



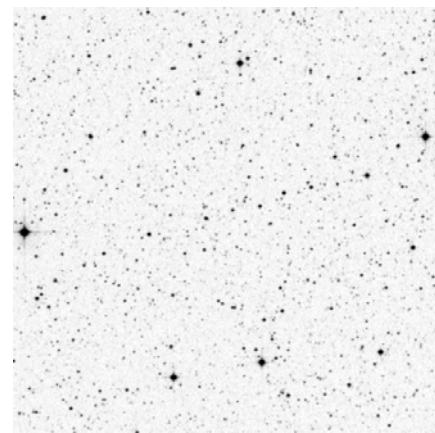
Other Names: NGC 6259  
Type: OC            Const: Sco  
V mag: 8            Size: 10  
RA: 17.013        Dec: -44.65

**457**



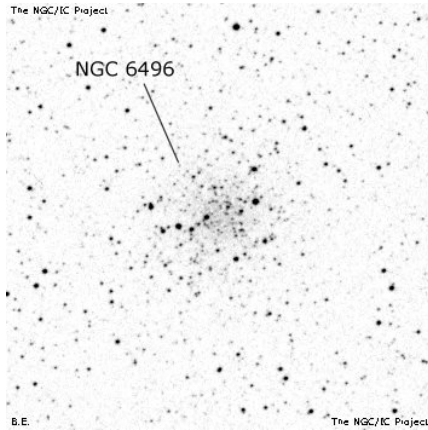
Other Names: NGC 6388  
Type: GC            Const: Sco  
V mag: 6.8        Size: 8.7  
RA: 17.605        Dec: -44.73

**458**



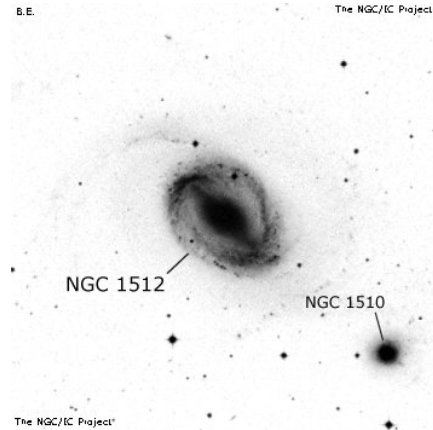
Other Names: line of stars  
Type: Ast            Const: Sco  
V mag:            Size: 8  
RA: 17.726        Dec: -44.10

460



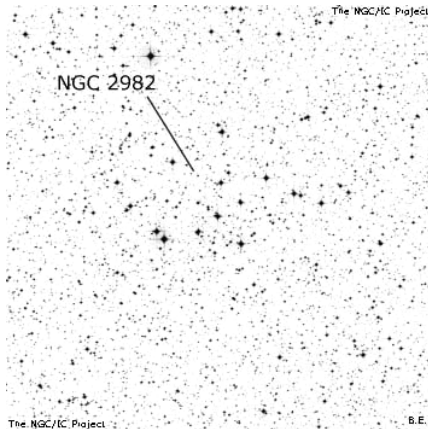
Other Names: NGC 6496  
 Type: GC                    Const: Sco  
 V mag: 8.6                Size: 6.9  
 RA: 17.984                Dec: -44.27

466



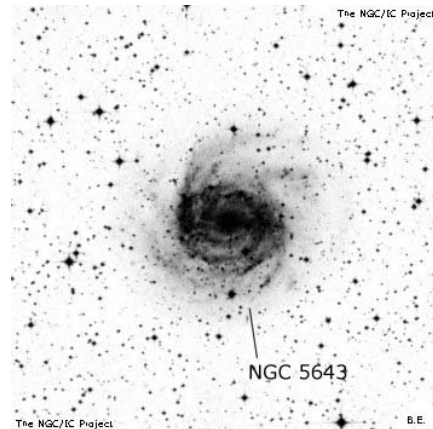
Other Names: NGC 1512  
 Type: Gxy                Const: Hor  
 V mag: 10.6                Size: 8.9  
 RA: 4.065                Dec: -43.35

468



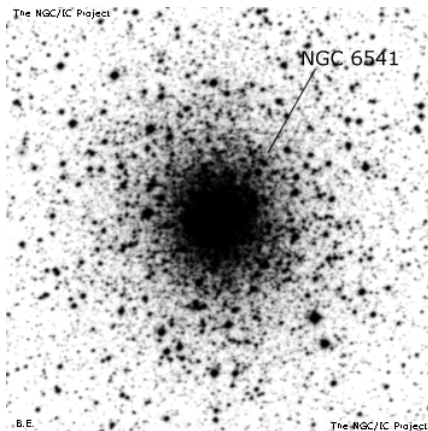
Other Names: NGC 2982  
 Type: OC                    Const: Vel  
 V mag:                    Size: 12  
 RA: 9.700                Dec: -44.02

469



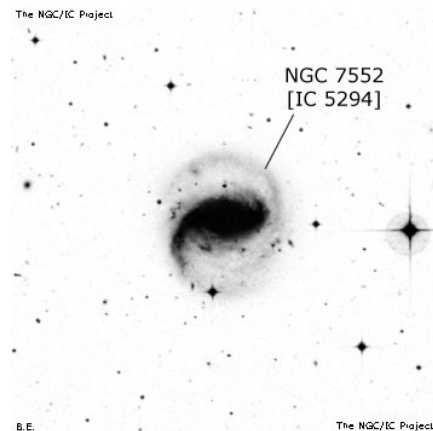
Other Names: NGC 5643  
 Type: Gxy                Const: Lup  
 V mag: 10.5                Size: 4.6  
 RA: 14.545                Dec: -44.17

473



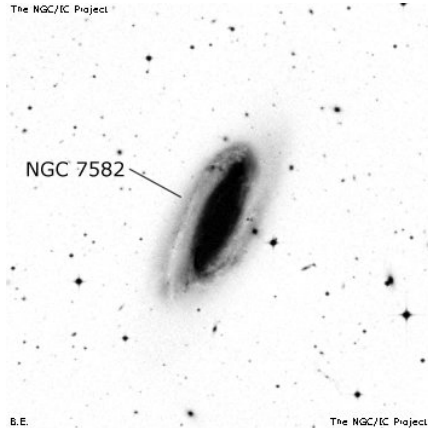
Other Names: Cacciatore, NGC 6541  
 Type: GC                    Const: CrA  
 V mag: 6.3                Size: 13  
 RA: 18.134                Dec: -43.70

475



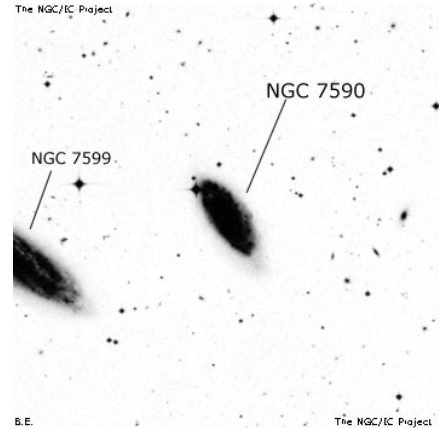
Other Names: NGC 7552  
 Type: Gxy                Const: Gru  
 V mag: 10.7                Size: 3.4  
 RA: 23.270                Dec: -42.58

476



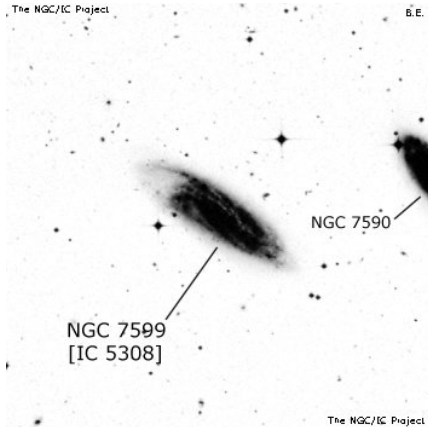
Other Names: NGC 7582  
 Type: Gxy            Const: Gru  
 V mag: 10.6        Size: 5  
 RA: 23.306        Dec: -42.37

477



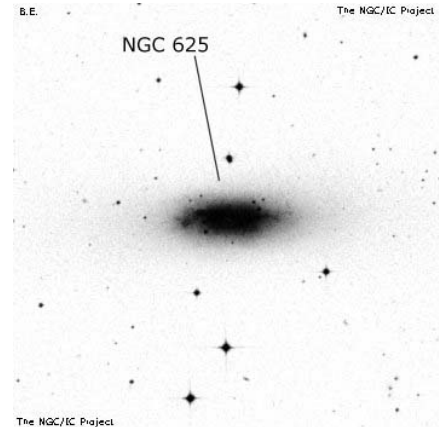
Other Names: NGC 7590  
 Type: Gxy            Const: Gru  
 V mag: 11.6        Size: 2.7  
 RA: 23.315        Dec: -42.23

477



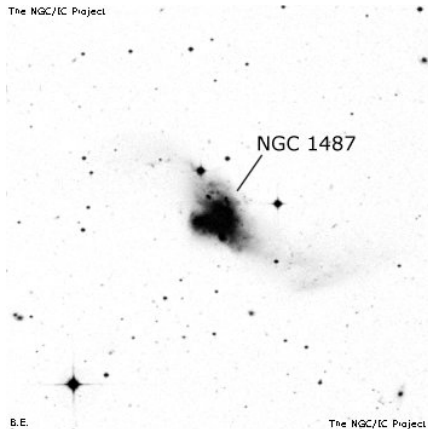
Other Names: NGC 7599  
 Type: Gxy            Const: Gru  
 V mag: 11.4        Size: 4.4  
 RA: 23.323        Dec: -42.26

479



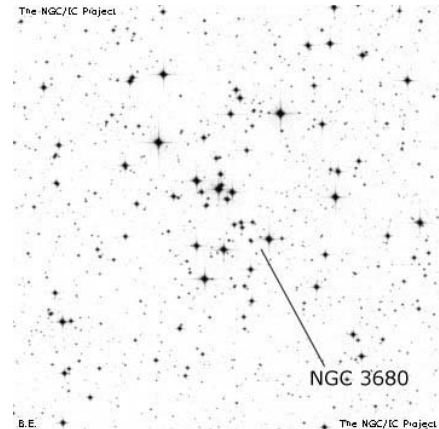
Other Names: NGC 625  
 Type: Gxy            Const: Phe  
 V mag: 11.4        Size: 5.8  
 RA: 1.585         Dec: -41.43

480



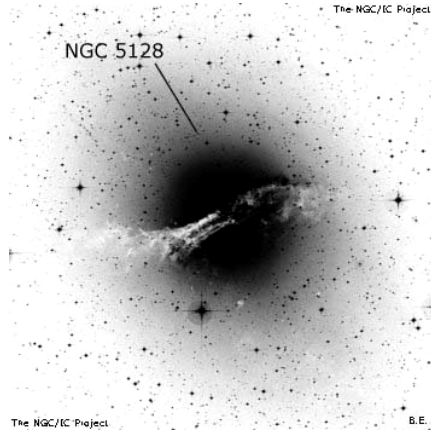
Other Names: NGC 1487  
 Type: Gxy            Const: Eri  
 V mag: 11.9        Size: 2  
 RA: 3.930         Dec: -42.37

481



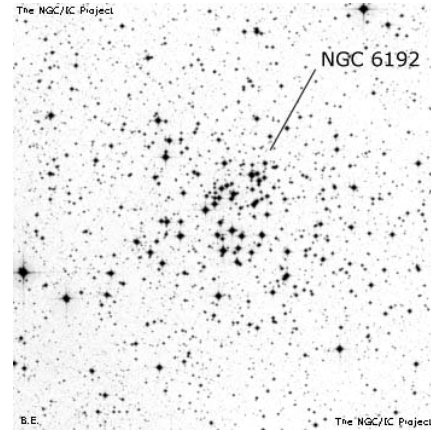
Other Names: NGC 3680  
 Type: OC             Const: Cen  
 V mag: 7.6         Size: 12  
 RA: 11.428        Dec: -43.23

482



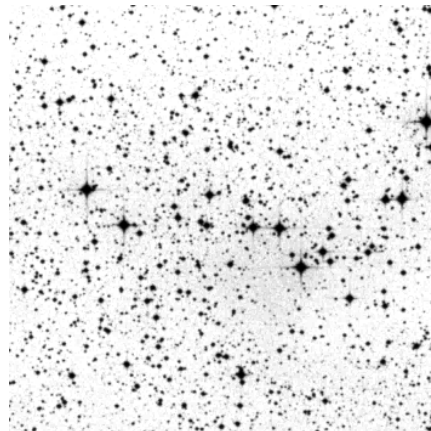
Other Names: NGC 5128  
 Type: Gxy            Const: Cen  
 V mag: 6.8            Size: 25.7  
 RA: 13.425            Dec: -43.02

483



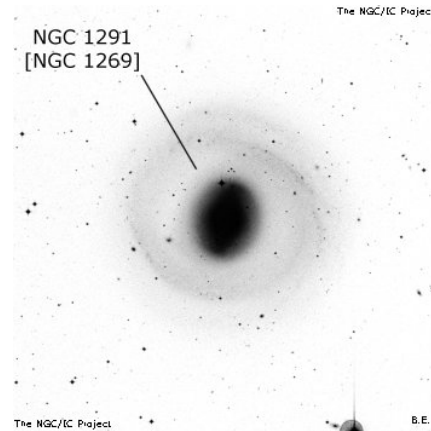
Other Names: NGC 6192  
 Type: OC            Const: Sco  
 V mag: 8.5            Size: 7  
 RA: 16.673            Dec: -43.37

484



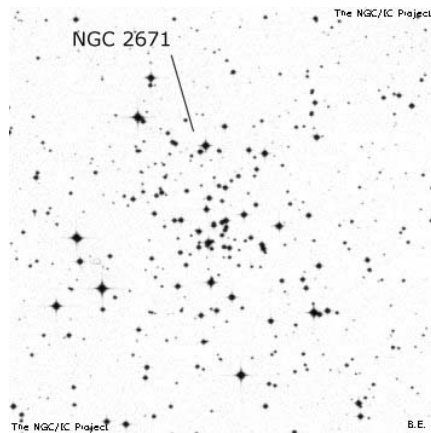
Other Names: Lynga 13  
 Type: OC            Const: Sco  
 V mag:                Size: 7  
 RA: 14.815            Dec: -43.43

487



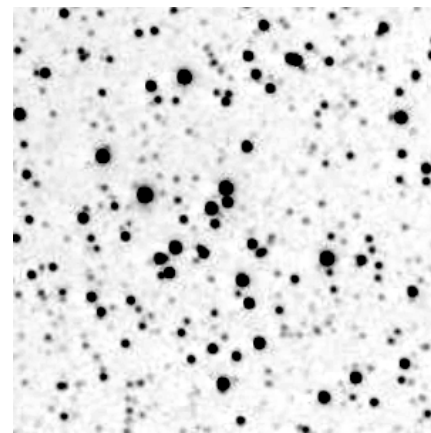
Other Names: NGC 1269  
 Type: Gxy            Const: Eri  
 V mag: 8.5            Size: 11.1  
 RA: 3.288            Dec: -41.11

489



Other Names: NGC 2671  
 Type: OC            Const: Vel  
 V mag: 11.6            Size: 4  
 RA: 8.770            Dec: -41.87

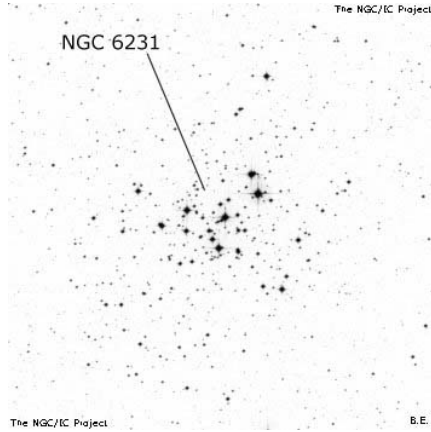
490



Other Names: Lac II.6, Trümpler 10  
 Type: OC            Const: Vel  
 V mag: 4.6            Size: 15  
 RA: 8.777            Dec: -42.57

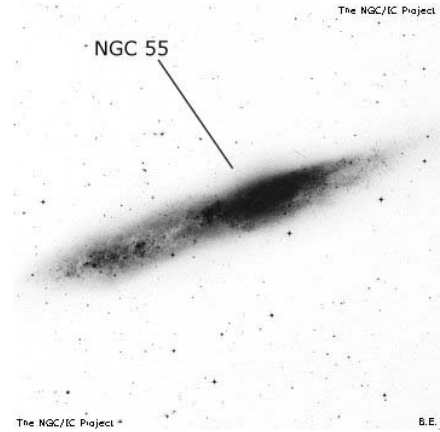


499



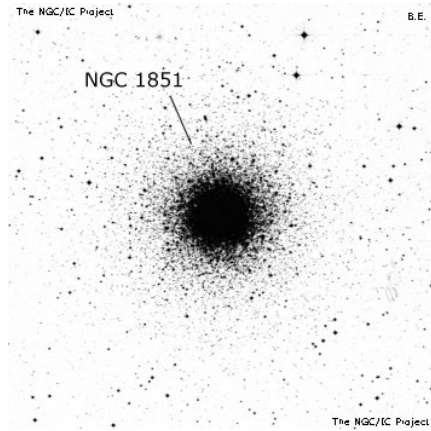
Other Names: Lac II.13, NGC 6231  
 Type: OC                      Const: Sco  
 V mag: 2.6                      Size: 15  
 RA: 16.900                      Dec: -41.80

507



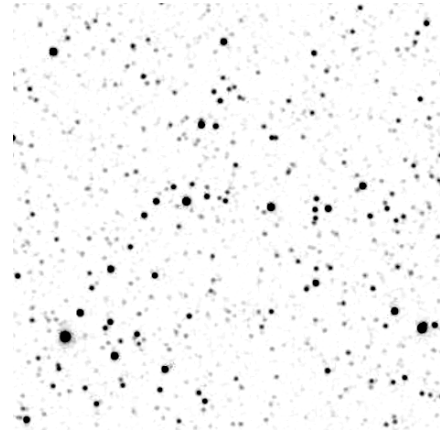
Other Names: NGC 55  
 Type: Gxy                      Const: Scl  
 V mag: 8.3                      Size: 32.4  
 RA: 0.252                      Dec: -39.22

508



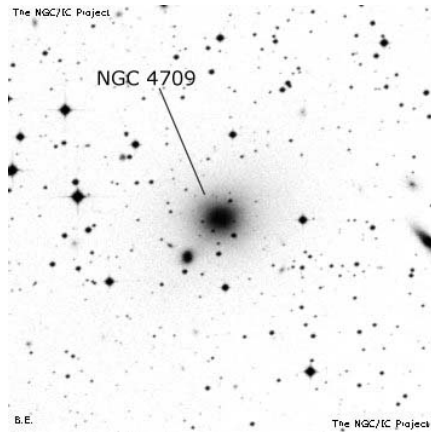
Other Names: NGC 1851  
 Type: GC                      Const: Col  
 V mag: 7.1                      Size: 11  
 RA: 5.235                      Dec: -40.03

509



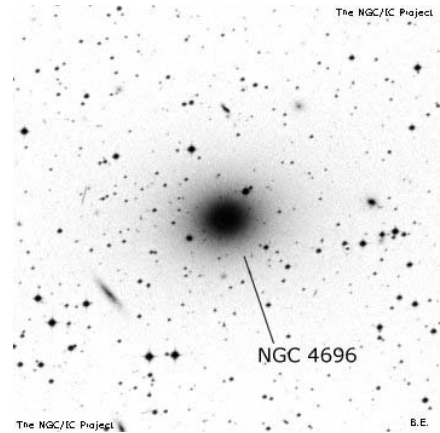
Other Names: stars in an F shape  
 Type: Ast                      Const: Cen  
 V mag:                      Size: 29  
 RA: 12.400                      Dec: -41.22

510  
poss



Other Names: NGC 4709  
 Type: Gxy                      Const: Cen  
 V mag: 11.6                      Size: 2.4  
 RA: 12.834                      Dec: -41.37

511



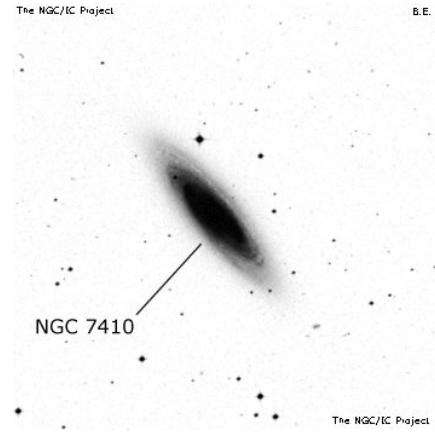
Other Names: NGC 4696  
 Type: Gxy                      Const: Cen  
 V mag: 10.5                      Size: 4.5  
 RA: 12.814                      Dec: -41.30

**514**



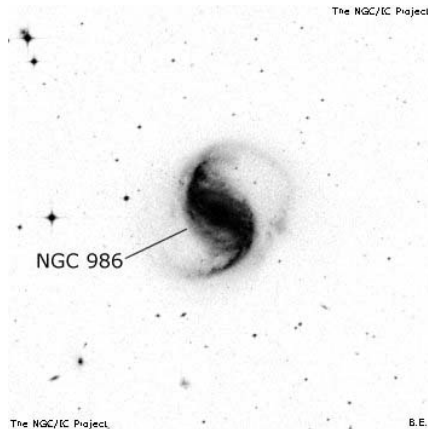
Other Names: Lac I.8, NGC 6124  
 Type: OC                      Const: Sco  
 V mag: 5.8                      Size: 40  
 RA: 16.427                      Dec: -40.67

**518**



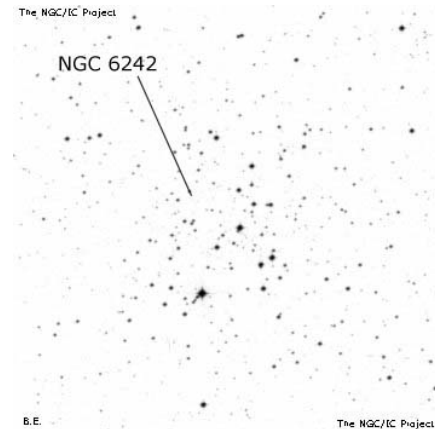
Other Names: NGC 7410  
 Type: Gxy                      Const: Gru  
 V mag: 10.6                      Size: 5.5  
 RA: 22.917                      Dec: -39.65

**519**



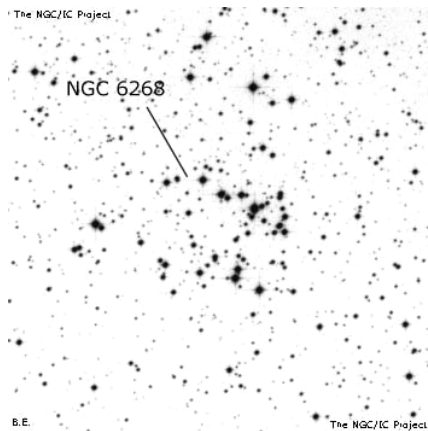
Other Names: NGC 986  
 Type: Gxy                      Const: For  
 V mag: 11                      Size: 3.9  
 RA: 2.559                      Dec: -39.03

**520**



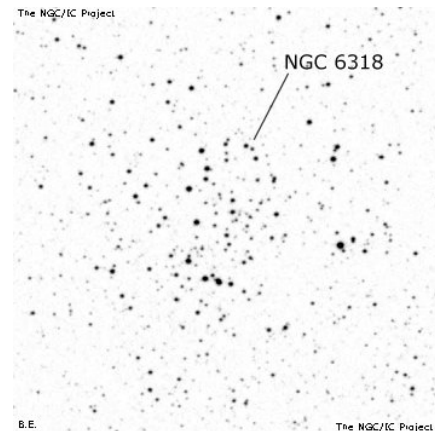
Other Names: Lac I.10, NGC 6242  
 Type: OC                      Const: Sco  
 V mag: 6.4                      Size: 9  
 RA: 16.927                      Dec: -39.50

**521**



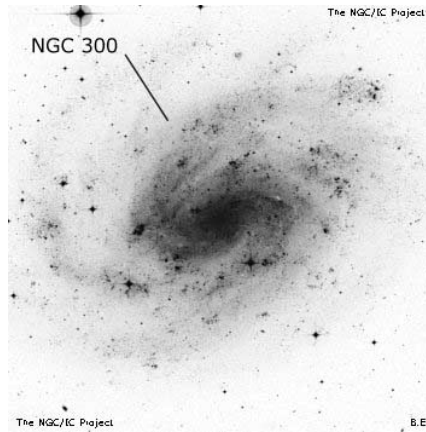
Other Names: NGC 6268  
 Type: OC                      Const: Sco  
 V mag: 9.5                      Size: 6  
 RA: 17.036                      Dec: -39.72

**522**



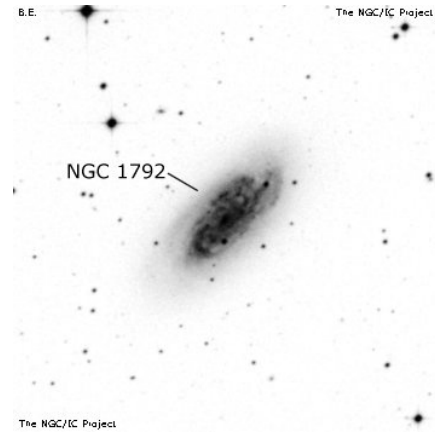
Other Names: NGC 6318  
 Type: OC                      Const: Sco  
 V mag: 11.8                      Size: 5  
 RA: 17.270                      Dec: -39.42

530



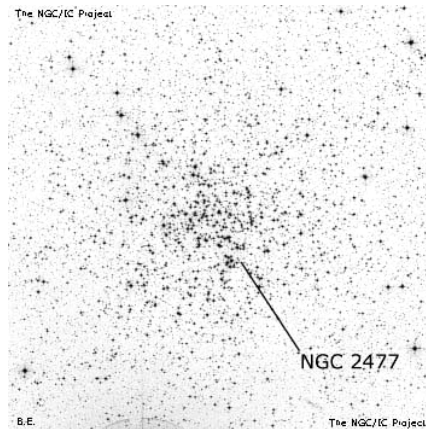
Other Names: NGC 300  
 Type: Gxy            Const: Scl  
 V mag: 8.3            Size: 21.9  
 RA: 0.915            Dec: -37.67

531



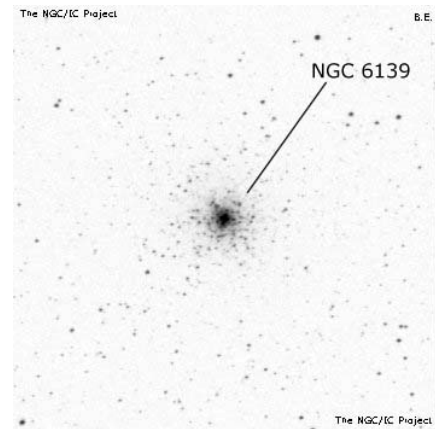
Other Names: NGC 1792  
 Type: Gxy            Const: Col  
 V mag: 10.2          Size: 5.2  
 RA: 5.088            Dec: -37.97

535



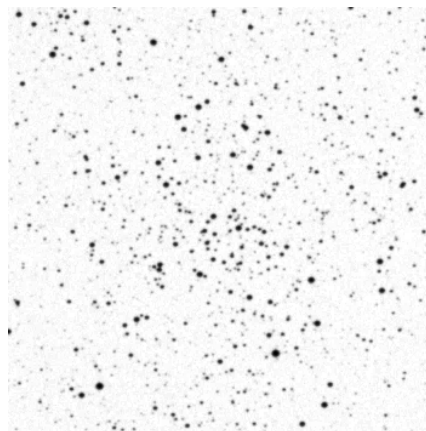
Other Names: Lac I.3, NGC 2477  
 Type: OC            Const: Pup  
 V mag: 5.8            Size: 27  
 RA: 7.872            Dec: -38.55

536



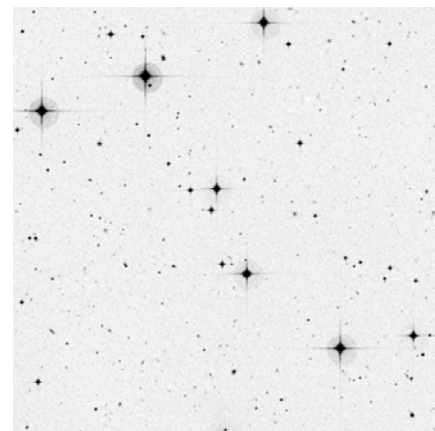
Other Names: NGC 6139  
 Type: GC            Const: Sco  
 V mag: 9.1            Size: 5.5  
 RA: 16.461           Dec: -38.85

537



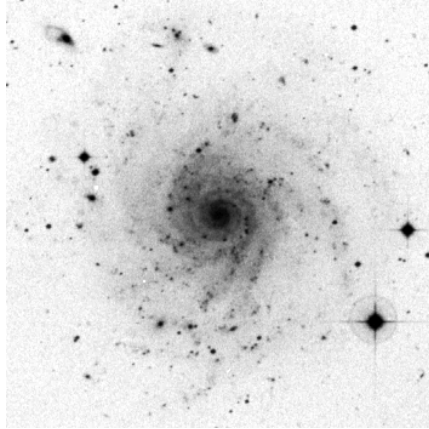
Other Names: Trümpler 25  
 Type: OC            Const: Sco  
 V mag: 11.7          Size: 8  
 RA: 17.408           Dec: -39.02

545



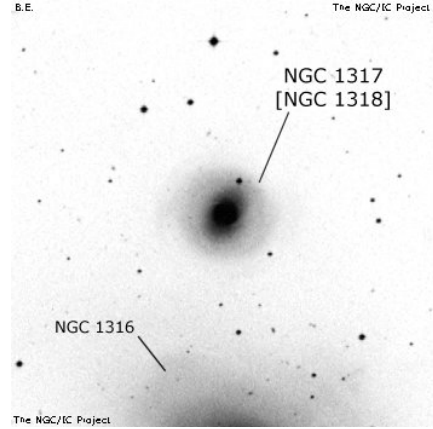
Other Names: stars in a T shape  
 Type: Ast            Const: Gru  
 V mag:                Size: 12  
 RA: 22.700           Dec: -38.10

**546**  
poss



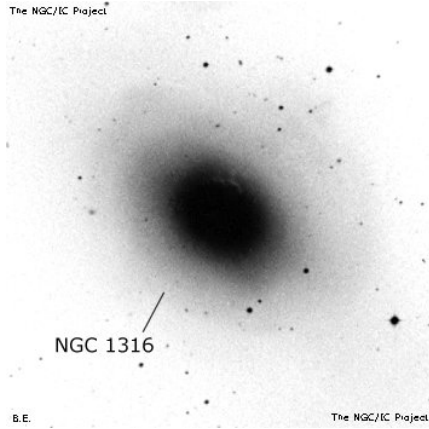
Other Names: IC 5332  
Type: Gxy            Const: Scl  
V mag: 10.4        Size: 8.9  
RA: 23.574        Dec: -36.10

**547**



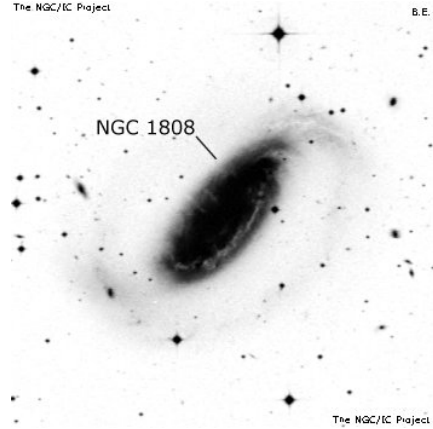
Other Names: NGC 1317  
Type: Gxy            Const: For  
V mag: 11.2        Size: 2.8  
RA: 3.379         Dec: -37.10

**548**



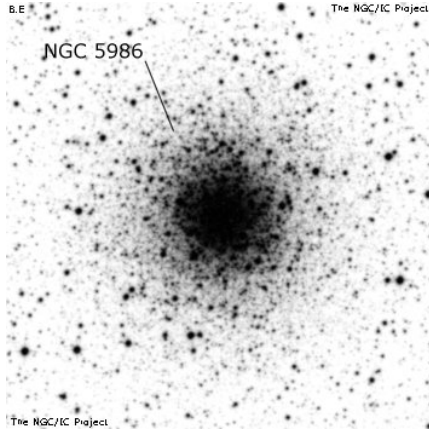
Other Names: NGC 1316  
Type: Gxy            Const: For  
V mag: 8.5         Size: 12  
RA: 3.378         Dec: -37.20

**549**



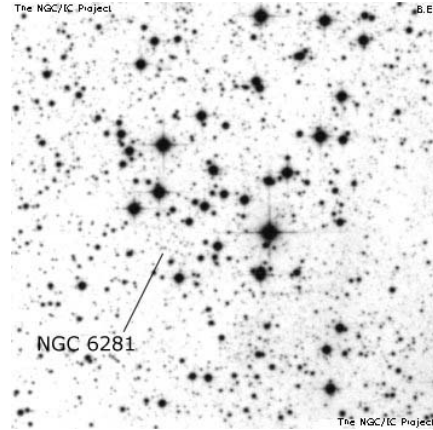
Other Names: NGC 1808  
Type: Gxy            Const: Col  
V mag: 10          Size: 6.5  
RA: 5.129         Dec: -37.50

**552**



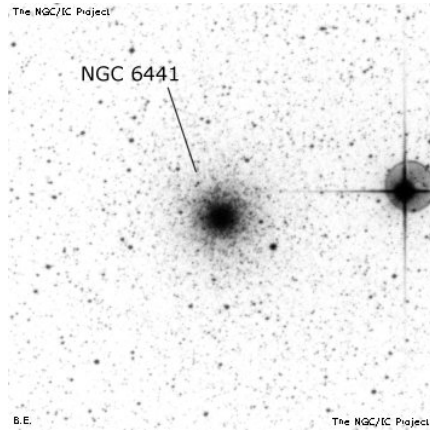
Other Names: NGC 5986  
Type: GC             Const: Lup  
V mag: 7.6          Size: 9.8  
RA: 15.768        Dec: -37.78

**555**



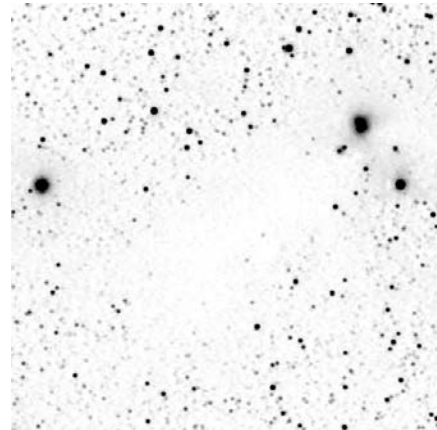
Other Names: NGC 6281  
Type: OC             Const: Sco  
V mag: 5.4          Size: 8  
RA: 17.078        Dec: -37.98

557



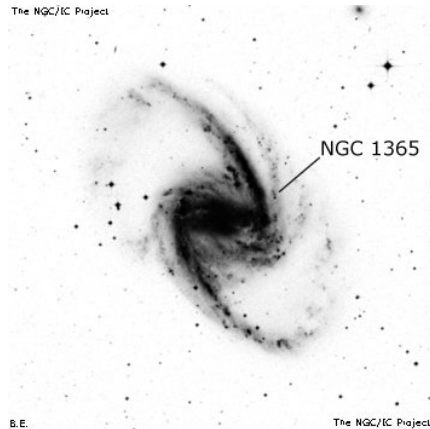
Other Names: NGC 6441  
 Type: GC                      Const: Sco  
 V mag: 7.2                    Size: 7.8  
 RA: 17.837                  Dec: -37.05

559



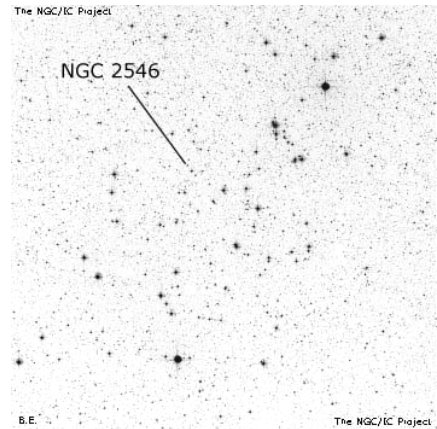
Other Names: Bernes 157  
 Type: Dark Neb              Const: CrA  
 V mag:                        Size: 80  
 RA: 19.050                  Dec: -37.15

562



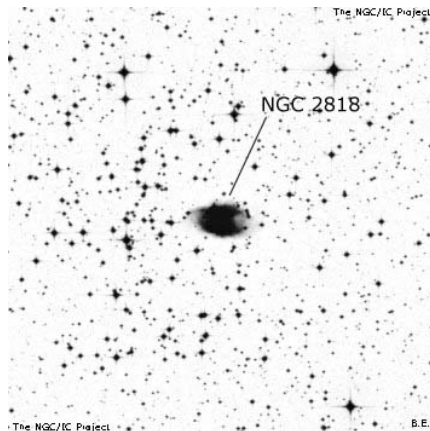
Other Names: NGC 1365  
 Type: Gxy                    Const: For  
 V mag: 9.6                    Size: 11.2  
 RA: 3.560                    Dec: -36.13

563



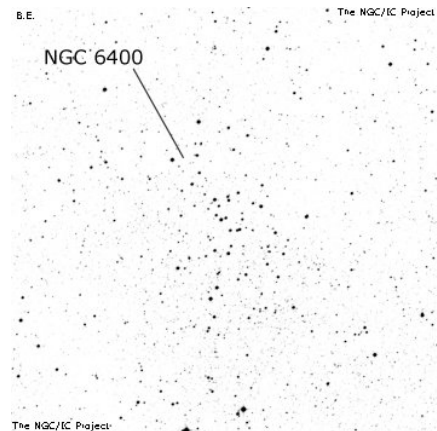
Other Names: Lac II.4, NGC 2546  
 Type: OC                    Const: Pup  
 V mag: 6.3                    Size: 41  
 RA: 8.207                    Dec: -37.63

564



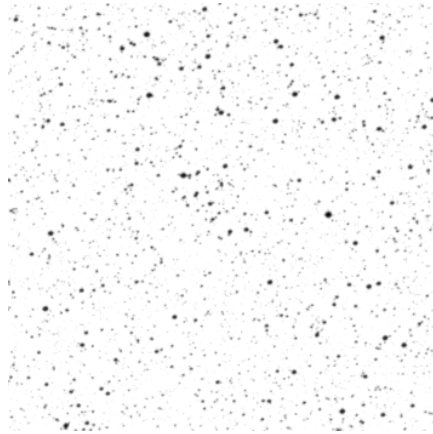
Other Names: NGC 2818  
 Type: PN                    Const: Pyx  
 V mag: 11.6                  Size: 35''  
 RA: 9.269                    Dec: -36.62

568



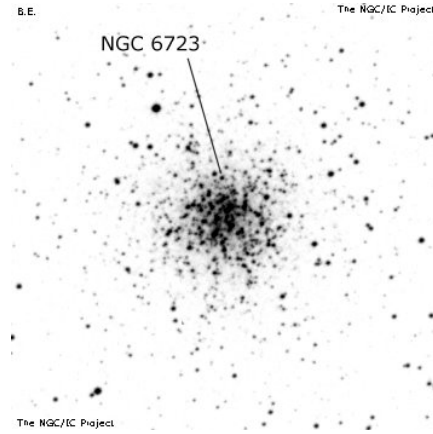
Other Names: NGC 6400  
 Type: OC                    Const: Sco  
 V mag: 8.8                    Size: 12  
 RA: 17.670                  Dec: -36.93

**569**



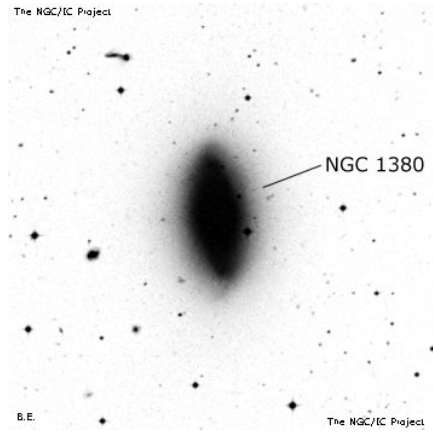
Other Names: NGC 6529  
Type: OC                    Const: Sgr  
V mag:                    Size: 6  
RA: 18.091                Dec: -36.28

**573**



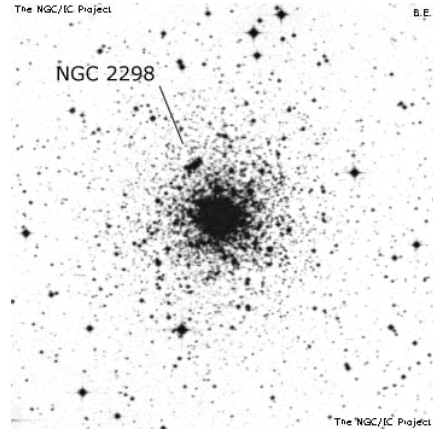
Other Names: NGC 6723  
Type: GC                    Const: Sgr  
V mag: 6.8                Size: 11  
RA: 18.993                Dec: -36.62

**574**



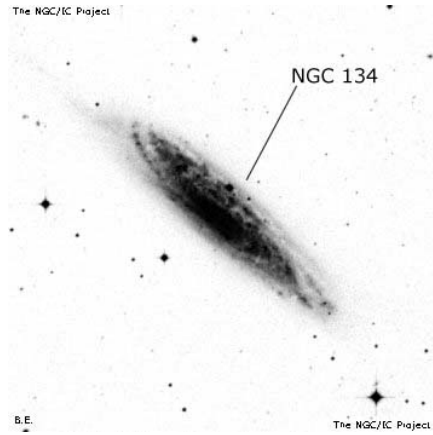
Other Names: NGC 1380  
Type: Gxy                    Const: For  
V mag: 10.2                Size: 4.8  
RA: 3.608                Dec: -34.97

**578**



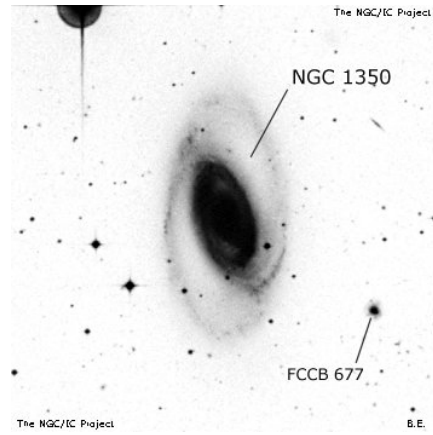
Other Names: NGC 2298  
Type: GC                    Const: Pup  
V mag: 9.3                Size: 6.8  
RA: 6.816                Dec: -36.00

**590**



Other Names: NGC 134  
Type: Gxy                    Const: Scl  
V mag: 10.5                Size: 8.5  
RA: 0.506                Dec: -33.23

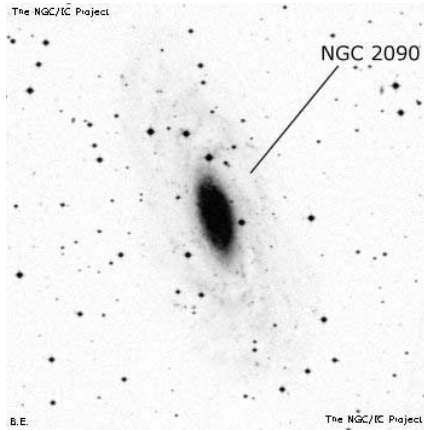
**591**



Other Names: NGC 1350  
Type: Gxy                    Const: For  
V mag: 10.7                Size: 5.2  
RA: 3.519                Dec: -33.62

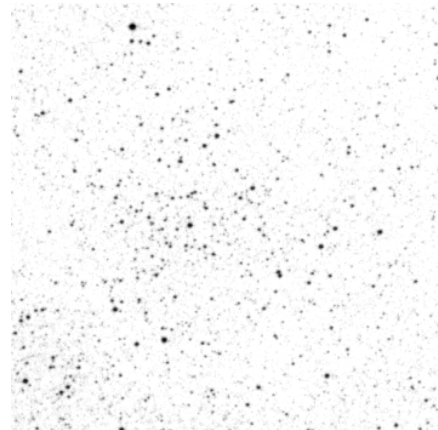


**594**



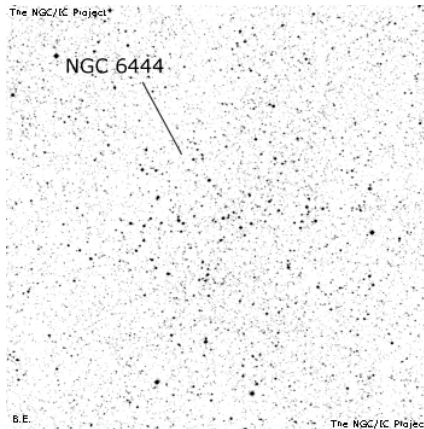
Other Names: NGC 2090  
 Type: Gxy                      Const: Col  
 V mag: 11.3                      Size: 4.9  
 RA: 5.784                      Dec: -34.25

**595**



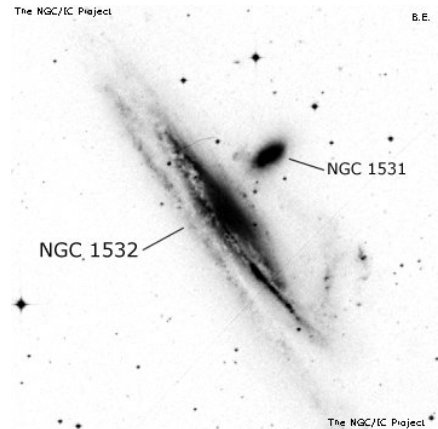
Other Names: Dun596, Ruprecht 128  
 Type: OC                      Const: Sco  
 V mag:                      Size: 3.4  
 RA: 17.738                      Dec: -34.88

**597**



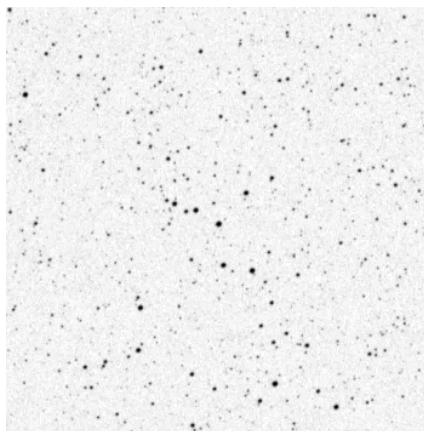
Other Names: NGC 6444  
 Type: OC                      Const: Sco  
 V mag:                      Size: 12  
 RA: 17.826                      Dec: -34.82

**600**



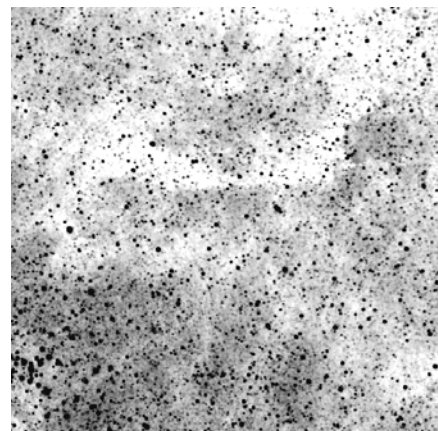
Other Names: NGC 1532  
 Type: Gxy                      Const: Eri  
 V mag: 10.6                      Size: 11.1  
 RA: 4.201                      Dec: -32.87

**604**



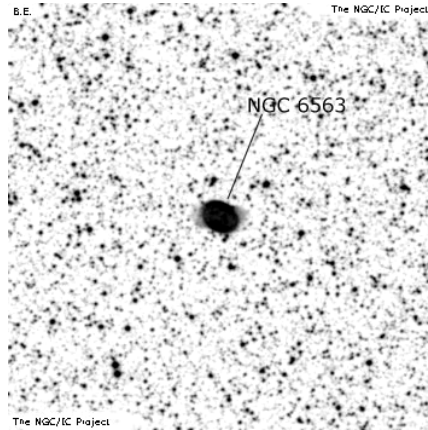
Other Names: 4 stars  
 Type: Ast                      Const: Sco  
 V mag:                      Size: 2.5  
 RA: 16.883                      Dec: -33.78

**605**



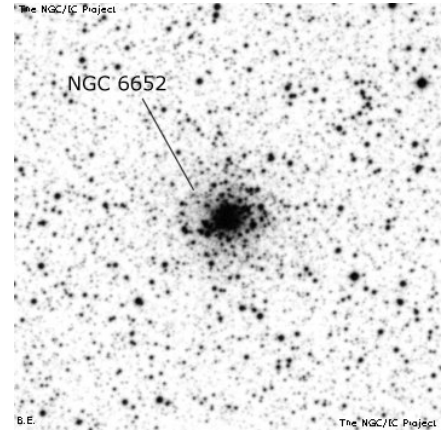
Other Names: Barnard 283  
 Type: Dark neb                      Const: Sco  
 V mag:                      Size: 85  
 RA: 17.817                      Dec: -33.87

**606**  
poss



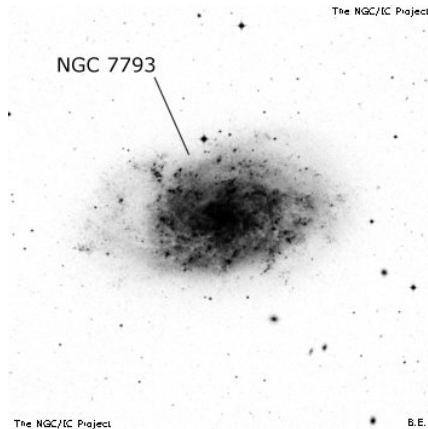
Other Names: NGC 6563  
Type: PN                      Const: Sgr  
V mag: 10.8                  Size: 54"  
RA: 18.201                  Dec: -33.87

**607**



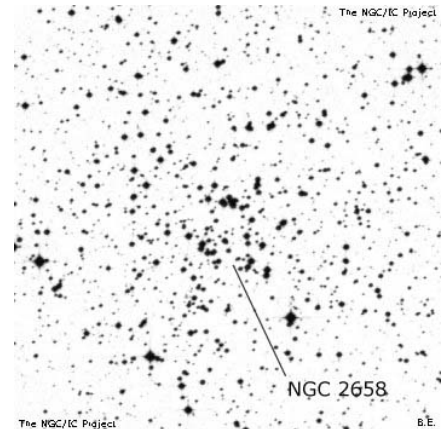
Other Names: NGC 6652  
Type: GC                      Const: Sgr  
V mag: 8.5                    Size: 3.5  
RA: 18.596                  Dec: -32.98

**608**



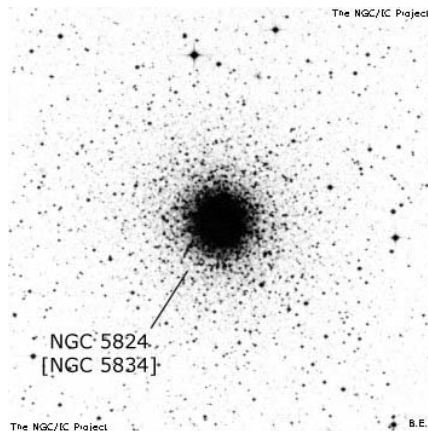
Other Names: NGC 7793  
Type: Gxy                      Const: Scl  
V mag: 9.2                    Size: 9.3  
RA: 23.964                  Dec: -32.58

**609**



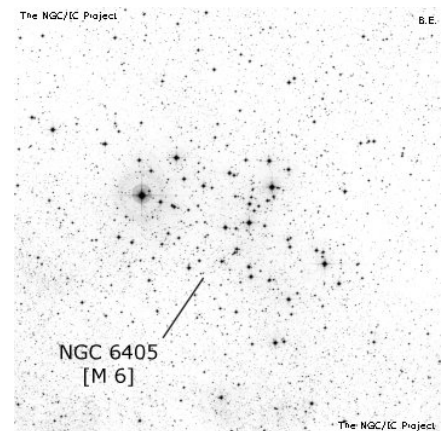
Other Names: NGC 2658  
Type: OC                      Const: Pyx  
V mag: 9.2                    Size: 12  
RA: 8.724                    Dec: -32.65

**611**



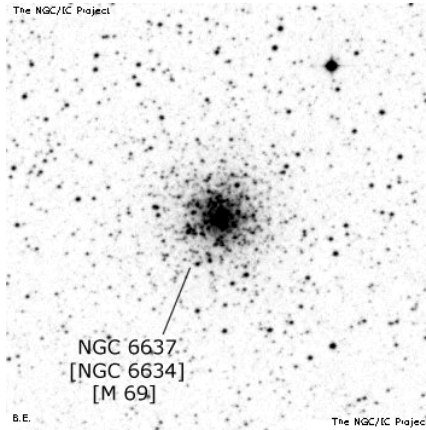
Other Names: NGC 5824  
Type: GC                      Const: Lup  
V mag: 9.1                    Size: 6.2  
RA: 15.066                  Dec: -33.07

**612**



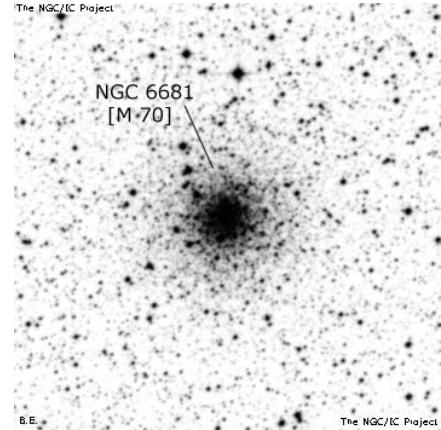
Other Names: Lac III.12, NGC 6405  
Type: OC                      Const: Sco  
V mag: 4.2                    Size: 25  
RA: 17.668                  Dec: -32.22

613



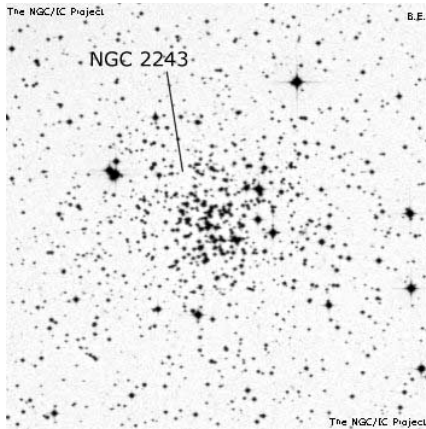
Other Names: NGC 6637  
 Type: GC                      Const: Sgr  
 V mag: 7.6                    Size: 7.1  
 RA: 18.523                  Dec: -32.33

614



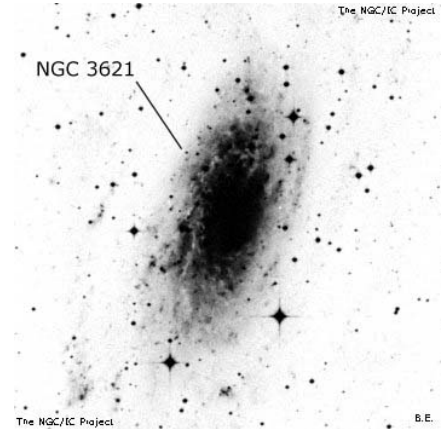
Other Names: NGC 6681  
 Type: GC                      Const: Sgr  
 V mag: 7.8                    Size: 7.8  
 RA: 18.720                  Dec: -32.28

616



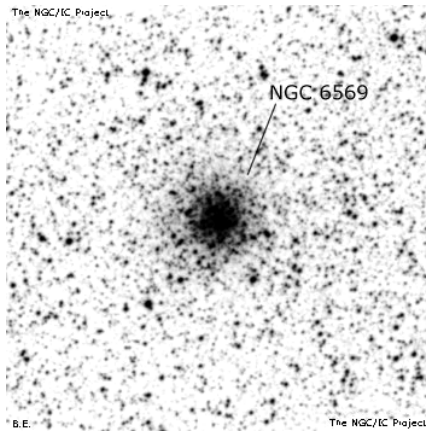
Other Names: NGC 2243  
 Type: OC                      Const: CMa  
 V mag: 9.4                    Size: 5  
 RA: 6.493                    Dec: -31.28

617



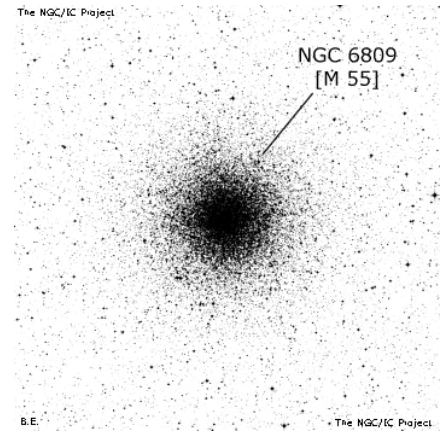
Other Names: I241, D610, NGC3621  
 Type: Gxy                    Const: Hya  
 V mag: 9.2                    Size: 12.3  
 RA: 11.305                  Dec: -32.80

619



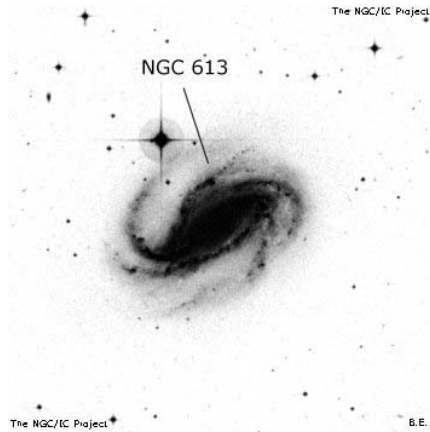
Other Names: II 201, NGC 6569  
 Type: GC                      Const: Sgr  
 V mag: 8.4                    Size: 5.8  
 RA: 18.227                  Dec: -31.82

620



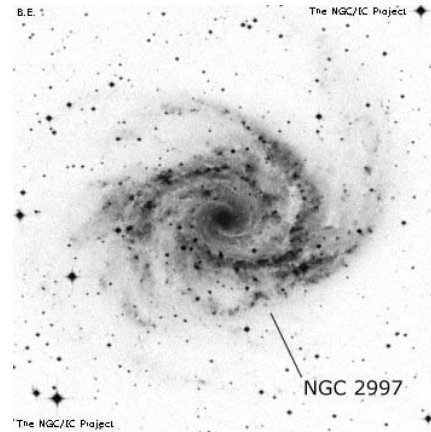
Other Names: Lac I.14, NGC 6809  
 Type: GC                      Const: Sgr  
 V mag: 6.3                    Size: 19  
 RA: 19.667                  Dec: -30.95

621



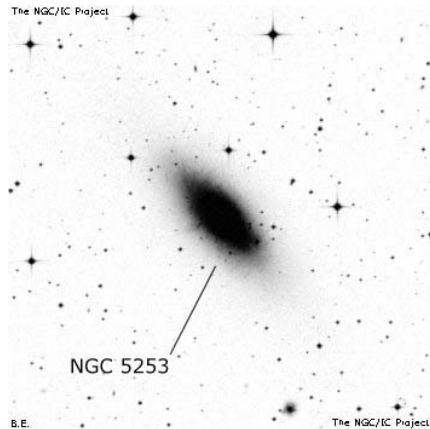
Other Names: I 281, NGC 613  
 Type: Gxy            Const: Scl  
 V mag: 10.1        Size: 5.5  
 RA: 1.572            Dec: -29.42

622



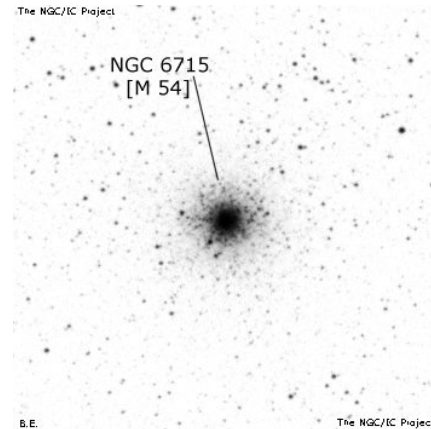
Other Names: V 50, NGC 2997  
 Type: Gxy            Const: Ant  
 V mag: 9.6            Size: 8.9  
 RA: 9.761            Dec: -31.18

623



Other Names: II 638, NGC 5253  
 Type: Gxy            Const: Cen  
 V mag: 10.7        Size: 5  
 RA: 13.666        Dec: -31.63

624



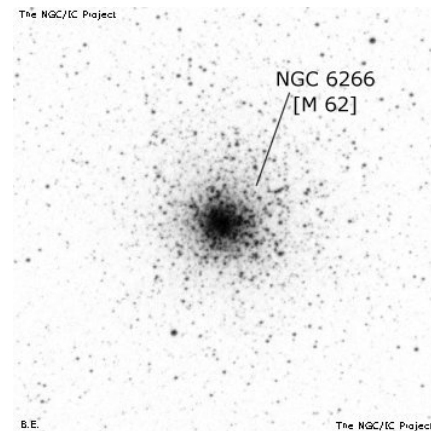
Other Names: NGC 6715  
 Type: GC            Const: Sgr  
 V mag: 7.7            Size: 9.1  
 RA: 18.918        Dec: -30.47

626



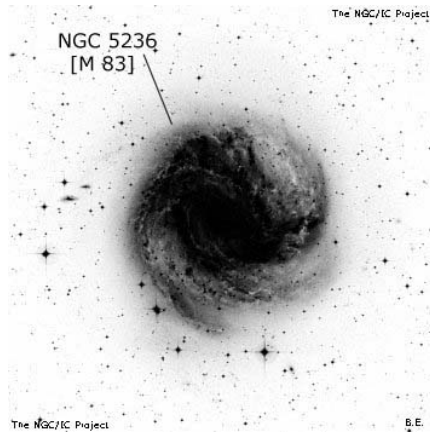
Other Names: VII 23, NGC 2489  
 Type: OC            Const: Pup  
 V mag: 7.9            Size: 8  
 RA: 7.938            Dec: -30.05

627



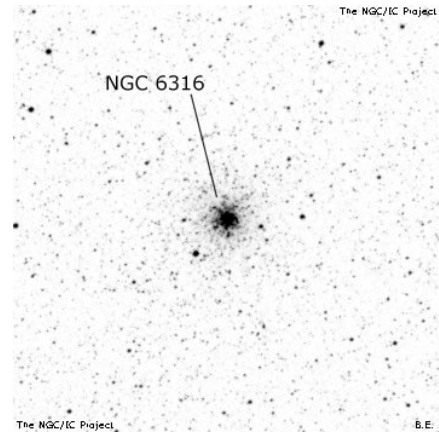
Other Names: NGC 6266  
 Type: GC            Const: Oph  
 V mag: 6.4            Size: 14  
 RA: 17.020        Dec: -30.10

**628**



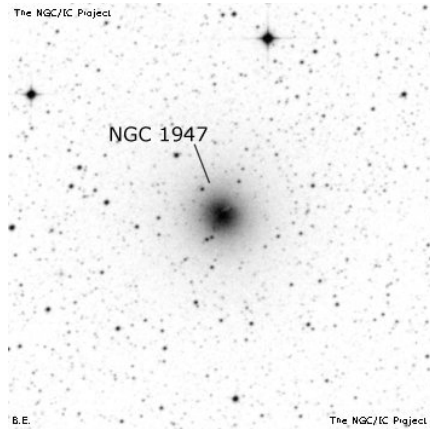
Other Names: Lac I.6, NGC 5236  
 Type: Gxy                      Const: Hya  
 V mag: 7.6                      Size: 11  
 RA: 13.617                      Dec: -29.87

**629**



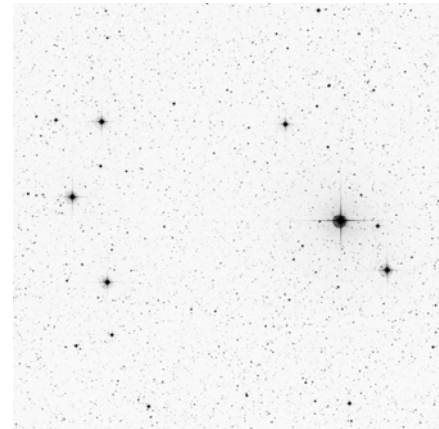
Other Names: I 45, NGC 6316  
 Type: GC                        Const: Oph  
 V mag: 8.1                      Size: 4.9  
 RA: 17.277                      Dec: -28.13

**mf  
421**



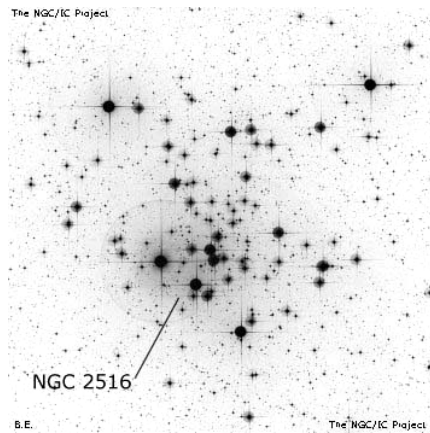
Other Names: NGC 1947  
 Type: Gxy                      Const: Dor  
 V mag: 10.9                      Size: 3  
 RA: 5.447                        Dec: -63.76

**mf  
426**



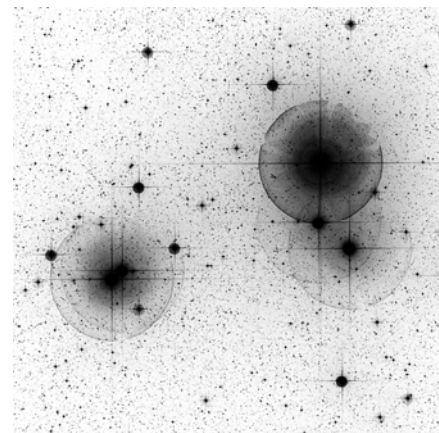
Other Names: Lac II.9, IC 2602  
 Type: OC                        Const: Car  
 V mag: 1.9                        Size: 50  
 RA: 10.720                        Dec: -64.40

**mf  
501**



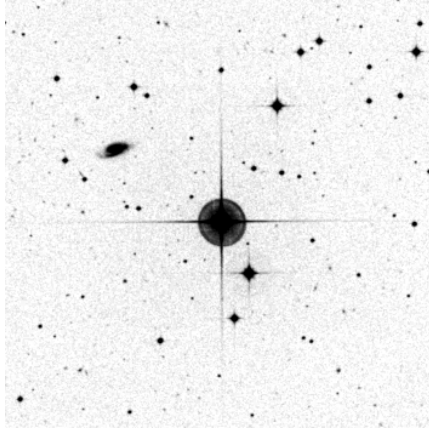
Other Names: Lac II.3, NGC 2516  
 Type: OC                        Const: Car  
 V mag: 3.8                        Size: 30  
 RA: 7.972                        Dec: -60.87

**mf  
705**



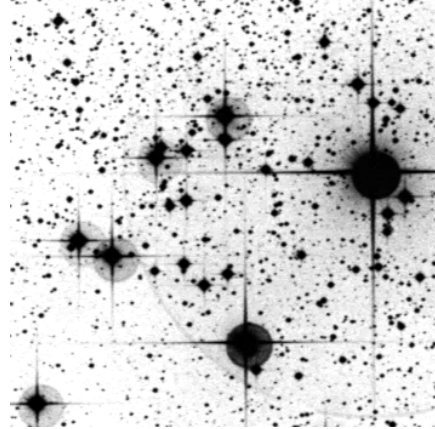
Other Names: Lac II.5, IC 2391  
 Type: OC                        Const: Vel  
 V mag: 2.5                        Size: 50  
 RA: 8.670                        Dec: -53.07

**mf**  
**759**



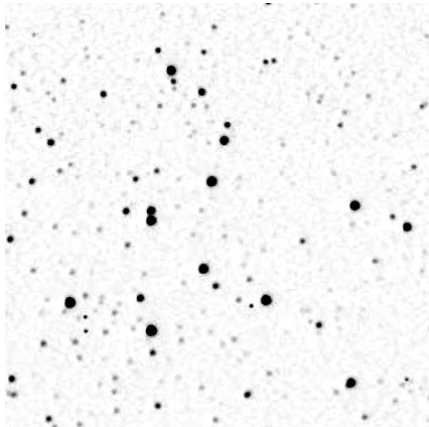
Other Names: Lac III.1  
Type: star            Const: Pic  
V mag: 7.1            Size: 0  
RA: 5.055            Dec: -49.48

**mf**  
**821**



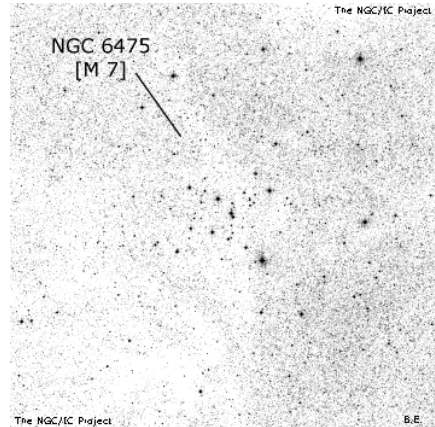
Other Names: Lac III.3, IC 2395  
Type: OC            Const: Vel  
V mag: 4.6            Size: 8  
RA: 8.703            Dec: -48.07

**mf**  
**854**



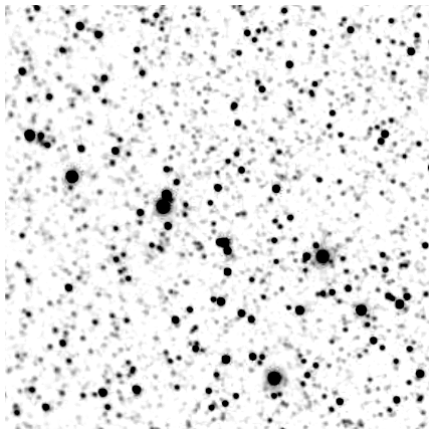
Other Names: Lac II.1  
Type: OC            Const: Cen  
V mag: 7.5            Size: 35  
RA: 4.062            Dec: -44.45

**mf**  
**1088**



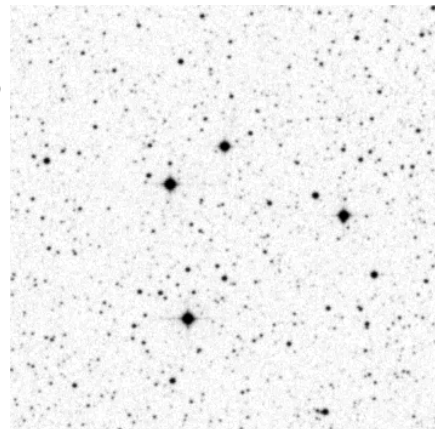
Other Names: Lac II.14, NGC 6475  
Type: OC            Const: Sco  
V mag: 3.5            Size: 80  
RA: 17.898            Dec: -34.82

**mf**  
**1100**



Other Names: Lac II.2, Collinder140  
Type: OC            Const: Pup  
V mag: 5.9            Size: 140  
RA: 7.438            Dec: -34.13

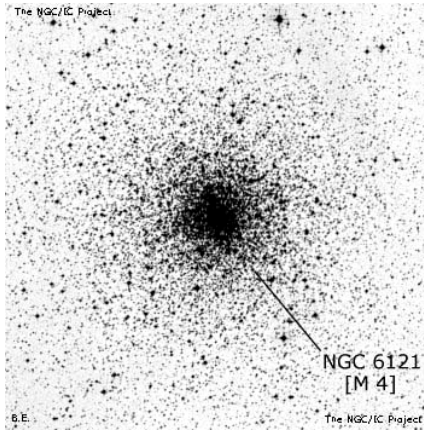
**mf**  
**1103**



Other Names: Lac I.11, NGC 6634  
Type: Ast            Const: Sgr  
V mag: 7.7            Size: 7.1  
RA: 18.573            Dec: -32.35

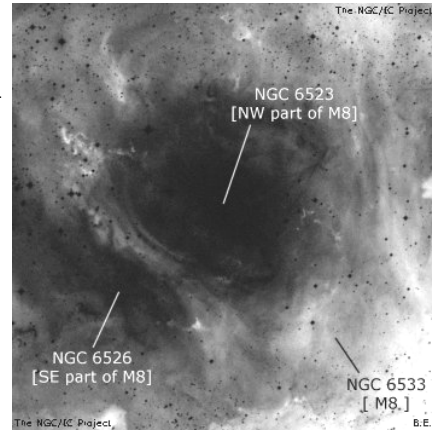


**mf**  
**1178**



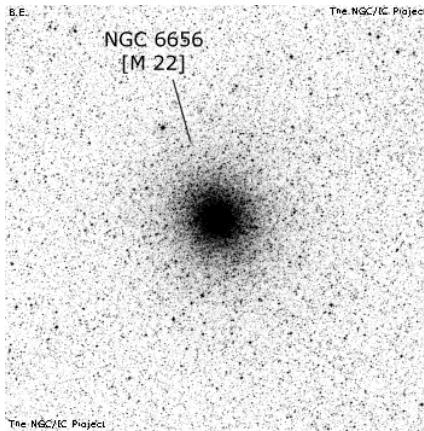
Other Names: Lac I.9, NGC 6121  
Type: GC                      Const: Sco  
V mag: 5.9                      Size: 26.3  
RA: 16.393                      Dec: -26.53

**mf**  
**1191**



Other Names: Lac III.13, NGC 6523  
Type: Neb                      Const: Sgr  
V mag: 5                        Size: 60  
RA: 18.063                      Dec: -24.38

**mf**  
**1195**



Other Names: Lac I.12, NGC 6656  
Type: GC                      Const: Sgr  
V mag: 6.5                      Size: 24  
RA: 18.607                      Dec: -29.90

## APPENDIX G – THE ORIGINAL HERSCHEL CATALOGUE

The printed section of the Appendix G includes part of the introduction to the book and one sample page of the Herschel catalogue. The complete catalogue (apart from the introduction) can be found on the accompanying CD as a pdf file.

# RESULTS

OF

# ASTRONOMICAL OBSERVATIONS

MADE DURING THE YEARS 1834, 5, 6, 7, 8.

AT THE CAPE OF GOOD HOPE;

BEING THE COMPLETION OF A TELESCOPIC SURVEY OF THE  
WHOLE SURFACE OF THE VISIBLE HEAVENS,

COMMENCED IN 1825,

BY

SIR JOHN F. W. HERSCHEL, BART., K.H.

M.A.; D.C.L.; F.R.S. L. & E.; Hon. M.R.I.A.; P.R.A.S.; F.G.S.; M.C.U.P.S.;

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THE ITALIAN AND HELVETIC SOCIETIES;

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NANTES, PADUA, PALERMO, ROME (DEI LINCRI), VENICE (ATHENÆUM), AND WILNA;

THE PHILOMATHIC SOCIETY OF PARIS; ASIATIC SOCIETY OF BENGAL;

SOUTH AFRICAN LITERARY AND PHILOSOPHICAL SOCIETY (C. G. H.); LITERARY AND HISTORICAL SOCIETY OF QUEBEC;  
HISTORICAL SOCIETY OF NEW YORK (U. S.);

ROYAL MEDICO-CHIRURGICAL SOCIETY, AND INSTITUTION OF CIVIL ENGINEERS, LONDON;

GEOGRAPHICAL SOCIETY OF BERLIN; ASTRONOMICAL AND METEOROLOGICAL SOCIETY OF BRITISH GUIANA;  
ETC. ETC. ETC.



L O N D O N:

PUBLISHED BY SMITH, ELDER AND CO., CORNHILL.

1847.

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those in which the observations occur, are numbered forward in continuation of my series of northern sweeps made at Slough; so that the Cape series (consisting of 382 sweeps) commences with sweep 429, and terminates with sweep 810. The general reference numbers in the first column are, in like manner, continued onward from No. 2307, the "omitted" nebula added after the 2306 regularly entered in order of R. A., in the Northern Catalogue.

The following is the system of abbreviations adopted:—

1. In the column of Synonyms—

The roman and arabic numerals (as I.45) occurring together, refer to the classes and numbers of nebulae and clusters discovered by my Father, and published in his catalogues:

The letter B, followed by a number, refers to the "Brisbane Catalogue" of Stars, by the general number of that catalogue:

M, so followed, to Messier's Catalogue of Nebulae:

Δ, ,, to Mr. Dunlop's do. do., published in the Transactions of the Royal Society, for 1828:

h, followed by a number, to my Northern Catalogue.

(2.) In the column of Descriptions and Remarks—

B	denotes	Bright.	l	denotes	long, or a little.
b	——	brighter.	M	——	in the middle.
br	——	broad.	m	——	much.
c	——	considerably.	N	——	nebula.
Cl or cl	——	cluster.	neb	——	nebulous; nebulosity.
comp	——	compressed.	n	——	north.
D	——	double star.	p	——	pretty (not very); preceding.
d	——	diameter, distance.	pos	——	angle of position.
E	——	extended, elongated, or elliptic.	R	——	round.
e	——	extremely.	r	——	resolvable.
ee	——	excessively.	S	——	small.
F	——	Faint.	s	——	south, suddenly.
f	——	following.	st	——	stars.
fig	——	figure.	sc	——	scattered.
g	——	gradually.	v	——	very.
i or irr	——	irregular.	vv	——	very very (exceedingly).
L	——	large.			

- \* Star.
- ⊕ Globular cluster.
- Planetary nebula.
- c Moon above the horizon.
- ◁ c Moon very troublesome.

(3) In order to fix in the reader's mind the appearances represented by such combinations, occurring in the description of a nebula, as gbM (gradually brighter in the middle), pslbM (pretty suddenly a little brighter in the middle), &c.; it will suffice to refer to the explanatory plate (Pl. IX. Phil. Trans. vol. for 1833), and to the accompanying table of explanations,

p. 494, of the same volume, in which, however, an important erratum exists (viz., in the explanations of figures 16, 17, and 18, in which the abbreviations pmbM, mbM, and vmbM, are, by mistake, printed instead of the correct ones descriptive of those figures which are psbM, sbM, and vsbM, respectively).

(4) As an example of the use of these abbreviations in the description of a nebula, the following is taken from the preface to the Northern Catalogue above referred to.

“vB; vL; lE; vgpmbM; 50" l; 45" br; pos 29°·3 by microm. a \* 9m. 45° np, dist. 80',” which expanded runs thus:—“Very bright; very large; a little extended; very gradually pretty much brighter in the middle; 50" long; 45" broad; angle of position (reckoned from the north and from a meridian in the direction north, following, south, preceding) measured 29°·3 by the micrometer. A star of the ninth magnitude is situated 45° north preceding the centre of the nebula and at a distance from it of 80" (both by estimation).” *Measured* angles are always marked as above in degrees and decimals. *Estimated* ones without decimals.

(5) It will of course be readily understood that very great differences will occur in the descriptions of one and the same nebula taken on different nights, and under different atmospheric circumstances, as well as in different states of the mirror and the eye: nor will it at all startle one accustomed to the observation of nebulae to see such an object described at one time as F; S; R (faint, small, round), and at another as B; pL; pmE; r; (bright; pretty large; pretty much extended; resolvable), &c. It is from a collection of all these descriptions that the true or final description has to be made out, in doing which it is to be recollected that the higher observed degrees of brightness, size, and extension are to be preferred in general to the lower ones, since atmospheric and other deteriorating causes always act in derogation of these qualities. For it appears to be a general law in the constitution of “extended” nebulae, that their interior or brighter strata are more nearly spherical than their exterior or fainter; their ellipticity diminishing as we proceed from without inwards, a character, so far, in favour of a rotation on an axis, in the manner of a body whose component parts have such an amount of mutual connexion as to admit of such a mode of rotation, and of the exertion of some degree of pressure one on another. It by no means, however, follows, that such a mode of rotation can be regarded as demonstrated by the general phenomenon in question, since a system of internal movements among an assemblage of bodies perfectly disconnected, and acting on each other solely by attractive forces exerted at a distance, is at least conceivable, by which the same appearances to a remote spectator would be produced.

(6) The number of nebulae and clusters comprised in the catalogue here presented, is 1708. Of these eighty-nine are identical with objects previously observed by myself at Slough, and which occur, in consequence, in my Northern Catalogue. In these cases it has been preferred to number them onwards, regularly in succession, as if now for the first time observed, rather than interrupt the succession by breaks or by the re-insertion of earlier numbers. The letter *h*, with its accompanying number in the column of synonyms, will point out the places in the former catalogue of such of these as occur there for the first time; and a reference to that catalogue being made will readily identify such others as have previously been described by my Father, or by Messier.

(7) Of the objects remaining, 135 are nebulae and clusters of my Father's catalogues, now, for the first time, reobserved; 9 are Messier's, 5 of which are identical with objects catalogued

by Mr. Dunlop; and 206 others have also been identified, with more or less certainty (indicated by the absence or presence of the sign ?), with objects observed by Mr. Dunlop, and described in his Catalogue of Nebulæ. The rest of the 629 objects, comprised in that catalogue, have escaped my observation; and as I am not conscious of any such negligence in the act of sweeping as could give rise to so large a defalcation, but, on the contrary, by entering them on my working lists (at least, until the general inutility of doing so, and loss of valuable time in fruitless search, thereby caused it to become apparent), took the usual precautions to ensure their rediscovery; and as I am, moreover, of opinion that my examination of the southern circumpolar region will be found, on the whole, to have been an effective one, I cannot help concluding that, at least in the majority of those cases, a want of sufficient light or defining power in the instrument\* used by Mr. Dunlop, has been the cause of his setting down objects as nebulæ where none really exist. That this is the case, in many instances, I have convinced myself by careful and persevering search over and around the places indicated in his catalogue.

---

## II.—REMARKS ON THE CATALOGUE.

*Of the degree of precision attributable to the places of the objects it comprises.*

(8) A great number of the objects described in the following catalogue rely on single observations for the determination of their places. On this point a remark applies similar to that made on the same subject in my Northern Catalogue. To have secured two or more observations of each recorded nebula, would have required the whole surface of the heavens to have been swept at least four times over, on the system of observation pursued, viz., twice for discovery, and twice for verification and precise determination. In going a second time over the same ground, or even a third, in the richer regions of the heavens, it would have been very inadvisable to have arrested the sweeping process at each nebula detected in the first course of sweeps for the purpose of reobserving it; since, by so doing, the escape of every other object of interest (whether nebula, cluster, or double star), situated in the same zone, and within two or three minutes in right ascension, or even more, if the object reobserved were in any way interesting, would have been infallibly insured. With such an instrument as that which I employed, the place of an object cannot be determined with precision otherwise than by including it in a zone with sufficient zero stars to form a connected series: and to have carried out this process with that especial view (however desirable a thing in itself) would have required at least two, and probably three years of additional observation. As it was, it proved difficult, and, in fact, was not entirely accomplished, to go clearly twice over every part of the surface of the hemisphere; and, in consequence, anything approaching to such a systematic

---

\* A 9-inch Newtonian reflector, of 9 feet focal length, which, in point of light, would correspond to about one-seventh of that used in my sweeps. That such was its construction, I conclude from the mention of the *large mirror* in Philosophical Transactions, 1828, p. 113.



**REDUCED OBSERVATIONS of NEBULÆ and CLUSTERS of STARS made with the 20 feet Reflector,  
in the years 1834, 1835, 1836, 1837, and 1838, at Feldhausen.**

No.	Synon.	R A. 1830.0.		N P D. 1830.0.		Description, Remarks, &c.	Sweep.		
		h.	m.	s.	d.			o.	°
2308	III. 461	0	1	15.4	115	55	0	F; v L; v m E; v g b M; 4' l; 1' br. ....	733
2309	.....	0	1	25.3	147	58	11	F; R; 30'.....	735
				25.8		58	21	e F; S; R.....	504
2310	.....	0	1	54.2	147	56	26	e F; preceding of 2. Requires attention, but no doubt remains.....	504
2311	.....	0	2	7.2	147	56	56	e e F; the following of 2. Requires attention, but leaves no doubt .....	504
				9.5		55	51	e e F; S; R .....	735
2312	.....	0	2	51.3	147	53	47	e F; S; R.....	735
2313	.....	0	5	16.2	114	7	16	e F; L; R (by diagram); v g v l b M; attached to and nearly involving a L star; the following of 2. A very F object of singular appearance, 3 or 4' diam.; forms a kind of cometic appendage to the star, which, however, is quite at the edge.	641
2314	.....	0	6	23.8	151	16	15	e F; R; v l b M; 30'.....	734
2315	Δ. 507	0	6	26.4	130	9	58	B; v L; v m E in a long irregular train, the preceding end being much the brightest. Whole length = 1½ diam. of field, or 22'. The nucleus is either a double star or a much more sharply terminated nebulous mass, elongated in a different position (146°.5) from that of the nebula (109°.8).	488
				28.3		9	41	v B; v L; v m E; at least 25' l and 3' br. The following part is faint, the preceding and shorter trinuclear the 2d. nucleus taken. A strange object.	638
				34.2		9	5	v B; v L; a very long irregular crooked ray with 3 nuclei, the second of which appears to consist of stars. See Plate IV. fig. 8.	737
2316	.....	0	12	49.4	139	34	35	e F; S; R. The first of a group of 4 nebulae .....	497
				49.6		34	50	e F; v S; R; g b M. 1st of 4.....	496
2317	.....	0	12	59.2	139	35	8	e F; v S; R. The 2nd of a group of 4; in centre of gravity of the triangle formed by the other three.	497
				59.2		35	20	e F; v S; R; 2nd of 4, in centre of gravity of the others.....	496
2318	.....	0	13	0.4	139	36	35	v F; S; R. The 3rd of a group of 4 .....	497
				1.6		36	40	v F; S; R; g b M. The 3rd of 4 .....	496
2319	.....	0	13	7.9	139	34	15	F; S; R. The last of a group of 4 .....	497
				8.1		34	30	F; R; g b M; 20'. The last of 4 .....	496
2320	.....	0	14	26.6	136	13	13	v F; R; b M; 40'; r.....	490
2321	.....	0	15	25.1	123	28	44	v F; R or v l E; g b M; 15' .....	635
				26.7		30	0	p B; p L; l E; 45'; precedes a star 14 m. ....	493
2322	Δ. 18 B. 38	0	16	24.4	163	1	58	⊕ 47 Toucani. A most magnificent globular cluster. It fills the field with its outskirts, but within its more compressed part, I can insulate a tolerably defined circular space of 90' diameter wherein the compression is much more decided and the stars seem to run together; and this part I think has a pale pinkish or rose-colour.	745
				25.9		1	51	The great cluster preceding the Nubecula Minor. Estimated diameter of the denser portion 5'; of the whole (not, however, including loose stragglers) 8'. Stars 14....16 m and one = 12 m, n p the centre. Excessively compressed. (N. B. In a sweep below the pole, when of course owing to the low altitude much of the light was lost.)	441
				26.5		1	15	47 Toucani. A most glorious globular cluster. The stars are =, 14 m, immensely numerous and compressed. Its last outliers extend to a distance of 2" 16" in R A from the centre. It is compressed to a blaze of light at the centre, the diameter of the more compressed part being 30" in R A. It is at first v g, then p s v m b M. It is completely insulated. After it has passed, the ground of the sky is perfectly black throughout the whole breadth of the sweep. There is a double * 11 m preceding the centre (Pos. 226°.5—Δ R A = 6'.5 from centre of neb).	482
				26.5		1	10	Fills the field with its stragglers, condensation in three distinct stages, first v g, next p s, and finally v s v m b M up to a central blaze whose diameter in R A is 13'.5 and whose colour is ruddy or orange-yellow, which contrasts evidently with the white light of the rest. The stars all nearly equal (12....14 m). A stupendous object. See Plate III. fig. 1.	625

## APPENDIX H – J2000 COORDINATES FOR THE HERSCHEL CATALOGUE

On the accompanying CD-ROM, the Excel file named ‘J2000 Coordinates Herschel Catalogue’ lists 1696 objects in the Herschel catalogue south of Declination – 17° with the original coordinates precessed to J2000 in decimal form, the NGC number and the type of object.

For the 1524 objects included in the statistical analyses done in Chapter 5.2 – Astrometry, also listed in the Excel file are:

1. The ESO catalogue Right Ascension and Declination as decimal hours and degrees
2. The difference between the Herschel position and the ESO position, in the sense ESO – Herschel for Right Ascension and Declination in arc-minutes
3. The radial distance (radius) in arc-minutes of the Herschel position from the ESO position.

The remaining 172 objects were not included in the ESO catalogue and no Right Ascension or Declination is given for them. Their cells are blank.

Part of this file, the first 22 entries, is reproduced below.

Hers #	Hers RA J2000	Hers dec J2000	NGC #	TYPE	ESO RA J2000 (hours)	ESO dec J2000 (degrees)	RA (ESO-Hers) (arc-min)	dec (ESO-Hers) (arc-min)	Radius (arc-min)
2308	0.1653	-24.970	24	Gxy	0.1658	-24.962	0.4129	0.5092	0.66
2309	0.1663	-57.023	25	Gxy	0.1665	-57.020	0.0619	0.1740	0.18
2310	0.1742	-56.994	31	Gxy	0.1774	-56.986	1.5641	0.4773	1.64
2311	0.1777	-57.002	28	Gxy	0.1737	-56.989	-1.9723	0.8120	2.13
2312	0.1896	-56.950	37	Gxy	0.1897	-56.957	0.0443	-0.4160	0.42
2313	0.2318	-23.175	45	Gxy	0.2342	-23.183	1.9646	-0.4915	2.03
2314	0.2465	-60.325	53	Gxy	0.2450	-60.328	-0.6723	-0.1998	0.70
2315	0.2500	-39.220	55	Gxy	0.2522	-39.220	1.5504	0.0197	1.55
2316	0.3534	-48.632	87	Gxy	0.3542	-48.630	0.4372	0.1302	0.46
2317	0.3561	-48.641	88	Gxy	0.3561	-48.642	0.0063	-0.0167	0.02
2318	0.3564	-48.666	89	Gxy	0.3567	-48.667	0.1443	-0.0667	0.16
2319	0.3585	-48.627	92	Gxy	0.3589	-48.627	0.2462	0.0022	0.25
2320	0.3806	-45.277	98	Gxy	0.3803	-45.270	-0.1874	0.3950	0.44
2321	0.3986	-32.536	101	Gxy	0.3986	-32.537	0.0291	-0.0662	0.07
2322	0.4008	-72.090	104	GC	0.4014	-72.082	0.1498	0.4770	0.50
2323	0.4464	-33.686	115	Gxy	0.4464	-33.677	0.0077	0.5827	0.58
2324	0.4493	-56.982	119	Gxy	0.4492	-56.978	-0.0546	0.2065	0.21
2325	0.4437	-71.531	121	OC	0.4464	-71.537	0.7678	-0.3453	0.84
2326	0.4940	-33.257	131	Gxy	0.4939	-33.258	-0.0876	-0.0927	0.13
2327	0.5064	-33.254	134	Gxy	0.5061	-33.245	-0.1944	0.5613	0.59
2328	0.5296	-5.149	145	Gxy					
2329	0.5546	-31.781	148	Gxy	0.5711	-31.787	12.6503	-0.3353	12.65

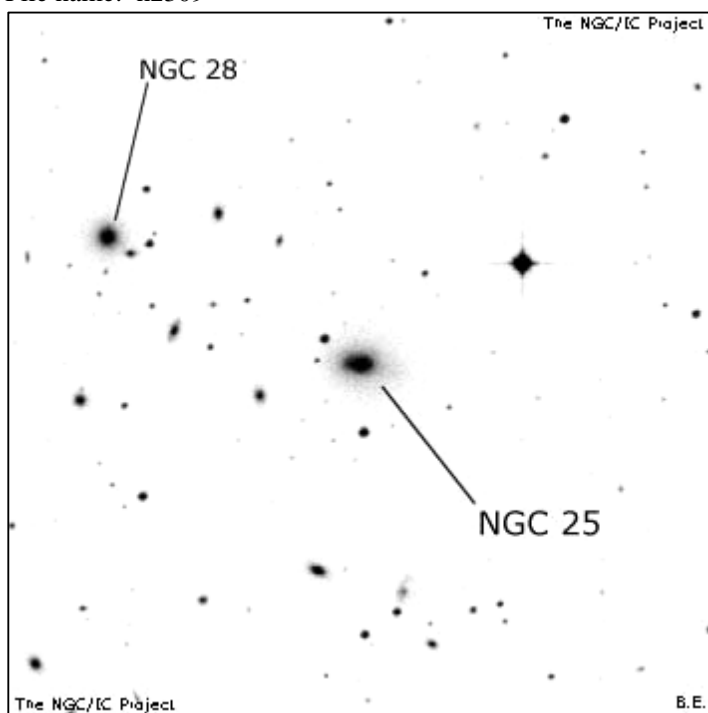
## APPENDIX I – IMAGES OF OBJECTS FOUND BY HERSCHEL

Included on the accompanying CD-ROM in a separate folder called ‘John Herschel Images’, are the images of the 1090 non-stellar objects discovered by John Herschel. Within this folder, each image is labelled with the John Herschel number, in the form h2309. Each object is positioned in the centre of the field and is labelled with its NGC number.

Objects catalogued by Herschel but discovered by others are not included. (Appendix J includes the name of the discoverer of all objects in the Lacaille, Dunlop and Herschel catalogues.)

An example of one of the images, with Herschel number 2309 is shown below.

File name: h2309



There is also a quick reference pdf file containing the same images of the objects discovered by John Herschel, called ‘John Herschel Images’. The images in this file are labelled with their Herschel number and include the NGC number, as above. They are in Herschel number order, with 35 images per page.

All images were obtained from ‘The NGC/IC Project’, *NGC/IC Images and data*, 2007, <[http://www.ngcic.org/dss/dss\\_ngc.asp](http://www.ngcic.org/dss/dss_ngc.asp)>, accessed 18 November, 2007.

## APPENDIX J – TABLE OF OBJECTS CATALOGUED BY LACAILLE, DUNLOP AND HERSCHEL

The complete table is to be found on the accompanying CD-ROM as an Excel file called ‘Combined Catalogue’. The first worksheet, also labelled ‘Combined Catalogue’ includes all 42 entries in the Lacaille catalogue, all identified non-stellar objects in the Dunlop catalogue plus a sample of other objects, and all non-stellar objects south of  $-29^{\circ}$  in the Herschel catalogue.

A small section is shown below. Listed in the table in Right Ascension order are:

1. The Lacaille number and/or Dunlop number and/or Herschel number
2. The NGC or IC number
3. Any other identifications assigned to the object or relevant comment on the object
4. The name of the first discoverer
5. The year the object was discovered
6. The type of object
7. The name of the constellation in which it is located
8. The visual magnitude
9. The size of the object in arc-minutes or arc-seconds for planetary nebulae
10. The Right Ascension in decimal hours and Declination in decimal degrees.

Lac #	Dun #	Hers #	NGC or IC #	Other names or comments	Discoverer	Year	Type	Const	V mag	Size (arc-min)	RA (hour)	Dec (deg)
		4010	7812		J Herschel	1834	Gxy	ScI	13.3	1.1	0.048	-34.24
		4011	7823		J Herschel	1836	Gxy	Tuc	12.8	1.2	0.079	-62.06
		4014	7		J Herschel	1834	Gxy	ScI	13.4	2.2	0.139	-29.92
		4015	10		J Herschel	1834	Gxy	ScI	12.5	2.4	0.143	-33.86
		2309	25		J Herschel	1834	Gxy	Phe	13.1	1.4	0.166	-57.02
		2310	28		J Herschel	1834	Gxy	Phe	13.8	1.5	0.174	-56.99
		2311	31		J Herschel	1834	Gxy	Phe	14.1	1.1	0.177	-56.99
		2312	37		J Herschel	1836	Gxy	Phe	13.8	1.1	0.190	-56.96
		2314	53		J Herschel	1836	Gxy	Tuc	13.1	2.0	0.245	-60.33
	507	2315	55		Dunlop	1826	Gxy	ScI	8.3	32.4	0.252	-39.22
		2316	87		J Herschel	1834	Gxy	Phe	14.3	0.9	0.354	-48.63
		2317	88		J Herschel	1834	Gxy	Phe	14.3	0.8	0.356	-48.64
		2318	89		J Herschel	1834	Gxy	Phe	13.5	1.2	0.357	-48.67
		2319	92		J Herschel	1834	Gxy	Phe	13	1.9	0.359	-48.63
		2320	98		J Herschel	1834	Gxy	Phe	13.1	1.7	0.380	-45.27
		2321	101		J Herschel	1834	Gxy	ScI	12.8	2.2	0.398	-32.54
Lac I.1	18	2322	104	47 Tuc	Lacaille	1751	GC	Tuc	4.0	50.0	0.401	-72.07
		2323	115		J Herschel	1834	Gxy	ScI	13.1	1.9	0.446	-33.68
		2325	121		J Herschel	1835	GC	Tuc		1.5	0.446	-71.54

The second worksheet within this Excel file, labelled ‘Dunlop offsets’ gives offsets for the Dunlop objects outside the Magellanic Clouds. The third worksheet labelled ‘Count of discoverers’ contains the data included in Table 6.1.